...Index to CONTENTS, November, 1934...

Airports
The Galveston Municipal Airport..... 59

Art and Architecture
Municipal Improvements Visualized by Art Department Pupils, Paterson Schools... 50
Art Commissions in Cooperation with City Planning Boards 63

Buildings, Public
The Municipal Group, Clayton, Mo..... 52

Child Welfare
Juvenile Court in Allegheny County, Pa., Uses Merit System..... 61

City Manager Plan
Recent City Manager Appointments..... 57

Civilian Conservation Corps
Important CCC Projects in New Jersey... 73

Conventions
National Municipal League Convention... 73
When and Where..... 87
The A. M. E. and the I. A. P. W. O..... 89

Courts
Juvenile Court in Allegheny County, Pa., Uses Merit System..... 61

Did You Read the October Issue?
Important Topics Covered..... 15

Finance and Taxation
Unsound and Ruinous Tax Limits..... 5
How Not to Solve the Taxation Problem.. 39
Liquidation of Tax Title Liens..... 61
Akron's Tax Dollars..... 62
The Municipal Bond Market..... 63
Tax Delinquency by Types of Realty..... 66
Municipal Finances Continue to Improve.. 73

Fire Prevention and Control
Shall Fire Apparatus Notice Red Traffic Lights? 13
A New Fireman's Helmet..... 95

Forward Steps
Items Contributed by Officials..... 61

Government and Administration
Major in Municipal Finance and Administration 48
Public Employee's Pledge..... 56
Modernizing the Political "Dark Continent" of County Government..... 57
175,418 Governmental Units in United States 67
National Municipal League Convention... 73

Fountains
An Electric Fountain in a Park Lake.... 62

Health and Housing
Sub-Standard Housing and Tuberculosis.. 42

Improving Municipal Administration
Items from Public Administration Clearing House 67

Law, Municipal
American Bar Association Appoints a Special Committee on the Law of Municipal Corporations 58

Legal Decisions
The City's Legal Rights and Duties..... 69

News and Illustrations
Hints for Officials..... 39

Outdoor Lighting
I. A. M. E. Report on Street Lighting.. 97
Mercury-Vapor Lamps at Post Office, Lynn, Mass. 99

Parks and Recreation
Bloomfield's New Concrete Stadium..... 61
An Electric Fountain in a Park Lake.... 62

Planning and Zoning
Municipal Improvements Visualized by Art Department Pupils in Paterson Schools. 50
Realizing Plans in Hinton..... 62
City Planning Activities in Meadville..... 63
Art Commissions in Cooperation with City Planning Boards 63
Slower Population Growth Affects City Functions 67
Zoning and Planning Notes..... 70

Police
What a Motorcycle Cop Can Do Besides Write Tickets 13
A Valuable Report on Police Practices... 13
Controlling the Force..... 13
Street-Signal Boxes and the Patrolman in the Age of Radio..... 45

Population
Slower Population Growth Affects City Functions 67

Power Plants
Wise Managers Are Improving Their Plants 73
Electronic Relay Facilitates Telemetering. 91

VOL. XLIX — NOVEMBER
No. 11 — 1934

The American City

ISSUED MONTHLY BY THE
American City Magazine Corporation
470 Fourth Ave., New York

EDGAR J. BUTTENHEIM, Pres. and Mgr.
HAROLD S. BUTTENHEIM, Editor
THEODORE R. KENDALL
Secretary and Engineering Editor
M. V. FULLER
Associate Editor
HERBERT K. SAXE
Treasurer
PRENTICE C. FORD, Asst. to President — MYRON MacLEOD, Advertising Manager

BRANCH OFFICES
Daily News Building, Chicago
TOM DIX, Vice-President
642 Hanna Building, Cleveland
GEORGE S. CONOVER, Vice-President
307 Mills Bldg., San Francisco
DUNCAN A. SCOTT, Representative

Subscription, $2 per annum
($3 to Canada and foreign countries)
Single copies, 35c
Back numbers available

Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879.
Printed in U. S. A.

In THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

Record Transformer Order and Record Transformers 93

Publications
New Books and Pamphlets..... 85

Publicity, City
Keeping the Public in Touch with City Hall 67

Public Works Administration
Several Billions Probable for Public Works 5
Will Your City, County and State Be Ready? 5
$250,000,000 PWA Projects for New York. 60
PWA Finances Most Construction Contracts 73

Radio
Street-Signal Boxes and the Patrolman in the Age of Radio..... 45

Schools
Municipal Improvements Visualized by Art Department Pupils, Paterson Schools... 50

Sewers
Mechanical Cleaning of Grit Chambers.. 11
Safe Sewage Disposal Needed..... 11
Dewatering Fresh Sewage Solids..... 11
Ready Market for Dry Sludge from Separate Digestion Tank..... 43

Street Cleaning
"Fastest Man We Have, But Not Very Thorough" 9
Street Cleaning Department Buildings, Toronto 9

Streets and Highways
Grade Separations 9
Highway Service and Maintenance in Wayne County, Mich..... 9
Stabilizing Gravel Roads in Northwest Michigan 47
Low-Cost Road Surfacing in Georgia..... 55
A New Maintenance Tool..... 89
Auxiliary Roll Makes Smooth Road Surfaces 91
New Closed-Back Hand Shovel..... 93
Research in Joint Fillers for Brick Pavements 93

Traffic Control and Facilitation
Grade Separations 9
Shall Fire Apparatus Notice Red Traffic Lights? 13
More on Compulsory Motor-Vehicle Inspection by Cities and States..... 64
Getting the Pedestrian Across the Street.. 65
Solves Traffic Problems..... 65
First School for Traffic Officers Starts.... 65
Clustered Reflector Buttons in Strips..... 95

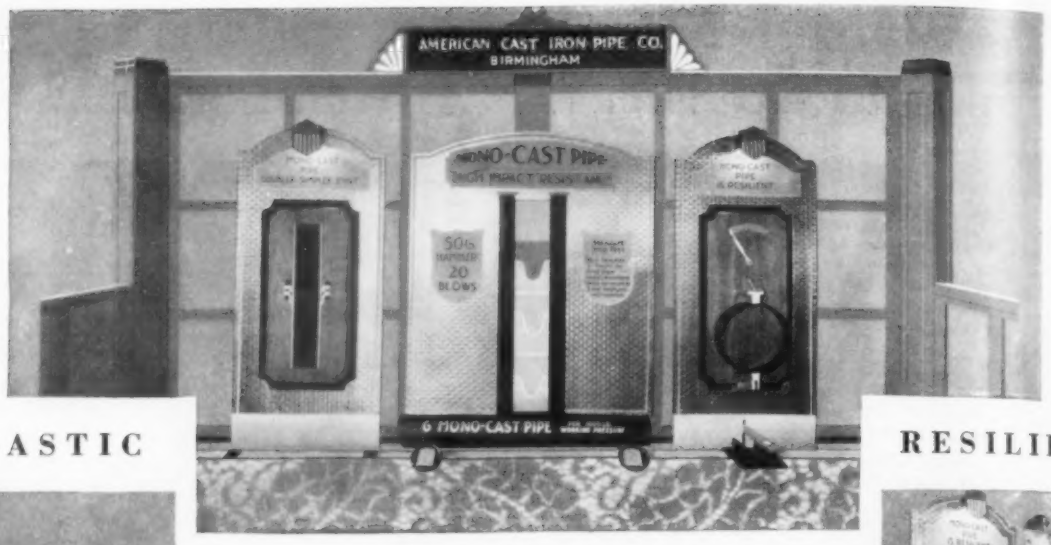
Unemployment Relief
Urges New Federal Relief Policy..... 67

Waste Disposal
Waste-Disposal Service Proves an Asset to Miami, Fla. 40

Water Supply and Water Works
Devices Permit Self-Cleaning of Channels. 7
145,000 GPD Saved by Water-Waste Survey 7
Thawing Frozen Hydrants with Carbide.. 7
Filtered Water Helps Reduce Typhoid, Lynchburg, Va. 7
A Pumping Station Built without an Appropriation 49
Thawing New York State Water Mains.. 53
Rates, Service and Installation Charges, Hydrant Rentals, Sprinkler Costs—VII. 75
A Setting for Installing Water Meters in Basements 89
Electronic Relay Facilitates Telemetering. 91
New Iron Body Gate-Valve..... 91
Breaking and Repairing a Hydrant in Decatur 93
Steam for Thawing Hydrants..... 95

See pages 17, 18, 19, 85, 87 for notices of catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 106



ELASTIC

RESILIENCE
Illustrated!

Photographs of Acipco Exhibit at the A. G. A. Convention, Atlantic City, week of October 29, 1934.

RESILIENT

WORDS and formulas fail to give a true picture of what *resilience, elasticity* and *impact resistance* mean in terms of the work a pipe will do and *keep on doing.* That's why we designed the demonstrations shown in the accompanying photographs. The small photograph at the left illustrates *elasticity*: downward pressure on the pedal spreads the split ring (cut from a regular Mono-Cast Pipe); as soon as you release this pressure, the ring springs back into place. The center photograph illustrates *impact resistance*: it is a working model of the "drop test" which in actual practice at Acipco includes dropping a 50-lb. hammer on the pipe through a series of blows, the first blow from a height of 3″ with the height of successive blows increased 3″ each—20 blows for a 6″ pipe designed for 1000 lbs. working pressure. The small photograph at the right illustrates *resilience*: downward pressure on the pedal, magnified many times by a system of levers, causes the ring (cut from a regular Mono-Cast Pipe) to "give;" the amount of "give" is registered by the travel of the needle.

● ***So you SEE what we mean when we say that in addition to having high tensile strength "Mono-Cast Centrifugal Pipe Weathers Shocks and Strains—Both in Handling and in Service!"***

AMERICAN CAST IRON PIPE COMPANY

BIRMINGHAM, ALABAMA

NEW YORK CITY CHICAGO MINNEAPOLIS KANSAS CITY CLEVELAND
DALLAS LOS ANGELES SAN FRANCISCO SEATTLE

To Restore Public Construction to Prosperity Levels

Several Billions Probable for Public Works

WELL-INFORMED observers in Washington are reflecting marked optimism as to approval by the Administration and by Congress of a public works and housing program vast and sustained enough not merely to generate some real steam, but to bring the Nation's economic engine into steady and productive operation.

A program of Federal and Federal-aid public works and housing of from 5 billion to 7 billion dollars for the coming year was forecast on October 19 by Scripps-Howard newspapers. This prophecy was followed on October 30 by a Washington dispatch to which *The New York Times* gave special prominence. It predicted the recommendation to President Roosevelt by the Public Works Administration of a five-year program involving the expenditure of 12 billion dollars—7 billion dollars on public works not self-liquidating, and 5 billion dollars on low-cost housing. Said this dispatch:

"High Administration officials are understood to be unanimously of the opinion that large-scale relief expenditures must be brought to an end as quickly as possible, and that the most feasible method of creating large-scale employment is through construction. Particularly, they feel, is this true in the case of low-cost housing, which would tend to stimulate heavy industries, with resultant reemployment, as well as the many branches of building trades. . . .

"No doubt was expressed here that such a program could be put through Congress, which has shown itself more receptive to public works expenditures than almost any other form of relief."

On the last day of the month the *New York Herald Tribune* described various proposals under consideration, one of which would involve $1,500,000,000 next year for housing alone. It was stated that "figures have been presented to the President indicating that a Federal subsidy to housing of $1,500,000,000 during the coming year would bring out approximately $5,000,000,000 in private money. Part of the Federal subsidy would be in the form of an investment which would be recoverable in part in the future, and part would be an outright expenditure. According to tentative estimates, expenditures of $1,500,000,000 for housing in the form of a subsidy would give work, directly and indirectly, to 4,500,000 persons. Under the present relief system the Federal Government is spending about as much for the maintenance of somewhat fewer families on relief."

Discussing proposals for a new subsidy system in connection with slum clearance and low-cost housing, the *Herald Tribune* correspondent said:

"The subsidy system is also under consideration for slum clearance. Here the type of subsidy proposed is a Federal investment of from 25 to 40 per cent of the total cost of the completed project, the balance of the money to be provided by private capital. Private investors would hold a first mortgage on the property. Income from rents would be expected to amortize the first mortgage in twenty years. The Federal Government would then have a clear title to the property and could use the income to reduce its debt or could turn the properties over to municipal housing corporations."

A comprehensive proposal to be considered by the PWA for possible recommendation to the President, THE AMERICAN CITY is reliably informed, has just been worked out by a group of experts. This would involve a five-year program of 5 billion dollars per annum, of which about 30 per cent would be earmarked for non-Federal public works, 20 per cent for urban low-cost housing and slum clearance, the other 50 per cent to be divided among Federal public works, express highways, grade-crossing elimination, water conservation, rural housing, rural electrification and other projects. Some of these projects would be of a self-liquidating character, while others would be financed by bond issues to be repaid ultimately out of national, state or local taxation.

If Congress were to approve a public works and housing program of this magnitude, the result, it is pointed out, would be to bring public construction throughout the United States up to pre-depression levels, and thus to aid substantially in the restoration of nation-wide prosperity.

Will Your City, County and State Be Ready?

DURING the three or four months which may elapse before the new public works appropriations are voted by Congress, far-sighted officials of state and local governments throughout the United States will make plans for the prompt and wise expenditure of generous allotments of such funds. The importance of such preparedness can hardly be overemphasized. For definite evidence of the effect of advance planning in the allotment of PWA funds during the current year, our readers are referred to Administrator Ickes' letter to the editor of THE AMERICAN CITY, published on this page last month.

Unsound and Ruinous Tax Limits

TAX limitation schemes such as the so-called "one per cent limitation" movement, which threaten the existence of municipal governments, were denounced as "unsound in principle and ruinous in practice" at the annual convention of the American Municipal Association, meeting in Chicago, October 25-27.

The Association adopted a resolution which declared that said schemes would force even greater debt burdens on municipalities and more onerous tax burdens upon the owners of homes and similar classes of citizens, instead of helping the average taxpayer, as claimed by the sponsors of the movement.

Setting forth that the American Municipal Association has for its purpose "the protection of the best interests of municipal government," and declaring there is a need for "an impartial and forthright statement of the implications of such tax limitation schemes as a means of offsetting purely emotional and biased appeals that are being made to citizens in behalf of the schemes," the resolution lists the following "reasoned conclusions":

1. The tax limitation proposals now being agitated are condemned as unsound in principle and ruinous in practice.

2. If the tax limitation proposals actually would restrict government expenditures, they would cause breakdowns in local government functions and, in consequence, cause harm to the very citizens—those of average economic resources—whom the advocates of the proposal profess a desire to help.

3. If the proposals limit revenues, they would destroy municipal credit and force many municipalities into actual insolvency, thus plunging governments, against their will, into greater financial difficulties than exist at present.

4. Citizens who own their homes and who may have been persuaded that the limitations are sought for their benefit are not only threatened by loss of important governmental services which benefit them and enhance the value of their homes but are placed in real danger of having tax burdens now fairly carried by other owners transferred to their shoulders.

5. Chief beneficiaries of the tax limitation proposals will be the private utilities, promoters of sabotage and large real estate speculators, either those who have taken advantage of present low valuations to buy up distress property and hope to precipitate an uncalled for "boom" in realty values, actually at the expense of persons who have lost their homes, or property speculators who desire to unload—at public expense—unwise subdivision projects planned during past booms.

6. The tax limitation proposals wherever already tried, notably in Ohio and West Virginia, have threatened the destruction of local government functions, plunged municipalities into unprecedented debt, failed to bring the favorable results claimed by proponents of the scheme and, in the end, made necessary legislation to undo the injury that has resulted.

MURFREESBORO saves 25% of fuel cost

Several years ago the city of Murfreesboro, Tenn., installed the 500,000-gallon elevated tank shown above. Since that time the city has been saving about 25 percent of the cost of the fuel in its waterworks system. In addition to lowering operating costs, elevated storage improves water pressures throughout a distribution system. Write for information or estimates when contemplating storage.

CHICAGO BRIDGE & IRON WORKS

B-406

Chicago.....2127 Old Colony Bldg.
New York.....3308-165 Broadway Bldg.
Cleveland.....2236 Rockefeller Bldg.
Birmingham.....1502 N. Fiftieth Street
Dallas.....1206 Burt Bldg.
San Francisco.....1033 Rialto Bldg.

Plants at Birmingham, Chicago, and Greenville, Pa.

IN AMERICAN WATER METERS

you obtain these needed features not found elsewhere. They insure maximum return on your meter investment:

Extra-thick reinforced measuring disc minimizes slippage, compels extra accuracy that wins comparative tests.

Frost bottom tested at the factory to break at the proper pressure—500 to 550 pounds. No dependence on flange bolts.

Frost-protected gear train, with gears that separate upon freezing as well as the chamber.

Chromium-shell gears with enclosed dirt-proof bearings wear almost forever and are adequately lubricated by water. Oil-enclosed gears, optional.

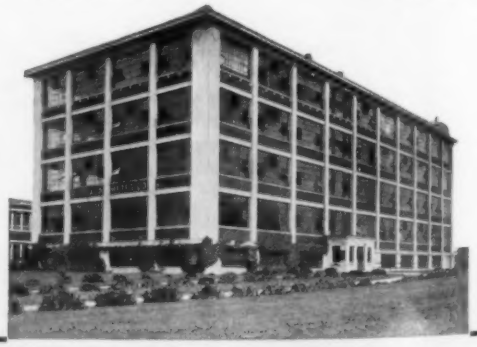
Simplicity that requires only the absolute minimum of parts and keeps each part simple.

Precision manufacture so fine that all parts are completely interchangeable and are regularly sold singly,—no matched pairs or unit assemblies needed.

Standard stock meters containing the construction described above will be supplied on request for inspection or testing purposes. Our catalog also gives full description.

BUFFALO METER COMPANY

2902 Main Street Buffalo, N. Y.



Water Supply and Purification

Devices Permit Self-Cleaning of Channels

A FLOWING stream can now be forced to clear itself, as it flows, of the gravel, sand and coarser sediment which forms the bed load of transported material. In the West, sand, silt and sediment in streams present serious problems to irrigators, power companies and municipal water-supply systems. R. L. Parshall, Engineer, U. S. Department of Agriculture, has developed three different devices known as sand traps, by which a small part of a stream can be diverted through them to carry out of the main stream a concentrated load of sand, silt and débris. These traps will save money by capturing the sand and silt which move down the streams and into main channels. The traps vary widely in construction and are relatively inexpensive, and each is designed to force a stream to clear itself under certain conditions of flow. The vortex tube trap is for use in relatively swift streams, the riffle deflector in moderate currents and the grating trap in gentle currents. In each the sandy material is concentrated into a small stream which is wasted from the main stream and thus deposits its load of sand and sediment on an area where it will do the least harm.

The vortex trap consists of a tapered tube in the floor of a flume built into the canal or channel. The tube lies diagonally across the stream and has a wide slit the full length of its upper side, which is placed level with the floor of the flume. The sand and gravel traveling down the channel is caught by the whirling body of water inside the tube device and conveyed to a discharge outlet in the side or bottom of the structure. Three installations in large canals have proved effective.

The rifle deflector consists of a series of curved vanes set on the bottom of a ditch or canal. Each vane is curved into approximately a 90-degree arc of a circle. The vanes when set in a line normal to the current and properly spaced, will move the bed load of sand or silt across the stream to an opening in the side wall of the channel, where a small stream carries them out. One installation of the riffle deflector has been made in a canal and functions satisfactorily when the vanes can be kept rid of such débris as tins, paper cartons, and other kinds of trash.

The grating type of trap is relatively new, and consists of a series of straight or curved vanes set on the floor of a flume normal to the stream flow and uniformly spaced, with top edges inclined downstream. The sand particles are drawn down behind the top edge of the device and retained there so that through the force of gravity they may settle vertically into a suitable receptacle below the grating in the floor of the flume and be discharged. It is also believed that the grating type of trap may be employed effectively in large size canals.

—From a paper presented by R. L. Parshall before the American Society of Agricultural Engineers and the Hydrology Section of the American Geophysical Union at Berkeley, Calif.

145,000 GPD Saved by Water-Waste Survey

THE town of Lexington, Mass., paid $3,456 a year for the water which was being lost through five underground leaks which were discovered by a water-waste survey completed by the Pitometer Co., of New York City. At the time of the survey, the industrial consumption amounted to 50,000 gallons per day, and this with the five underground leaks which were wasting 145,000 gallons per day and the standpipe leakage made a total of 198,000 gallons per day, which was definitely accounted for by the survey. The rest of the water purchased from the Metropolitan District Commission represented actual use by the people and the unavoidable leakage that exists in every water system. These leaks were too small to justify the expense of locating and stopping them.

The Metropolitan Commission for the year in which this survey was made reported a total meter registration of 236,427,000 gallons, for which the town was charged $22,688. Two-thirds of this charge, or $15,124, was for the actual quantity of water used and was charged at the rate of 6.4 cents per thousand gallons. The leaks located, which were wasting 54,000,000 gallons a year, at this rate, cost Lexington $3,456 for the year.

	Gallons	Per Cent
Purchased from Metropolitan..	236,427,000	100
Sold through meters	126.760,000	53.5
Underground leakage (145,000 gpd)	52,925,000	22.3
Leakage in standpipe (3,00 gpd)	1,095,000	0.5
Unaccounted for (slippage and and stoppage in small meters, public uses, unavoidable small leaks in 69 miles of mains)..	55,925,000	23.7
Total use	236,427,000	100

The total cost of this survey, including the wages of men supplied by the town, amounted to $2,831.55, and the time required was 44 days. During the course of the survey, the venturi meter of the Metropolitan District Commission was tested and found to be registering correctly.

—From a paper by A. A. Ross, Superintendent of Water and Sewer Department, Lexington, Mass., presented before the New England Water Works Association.

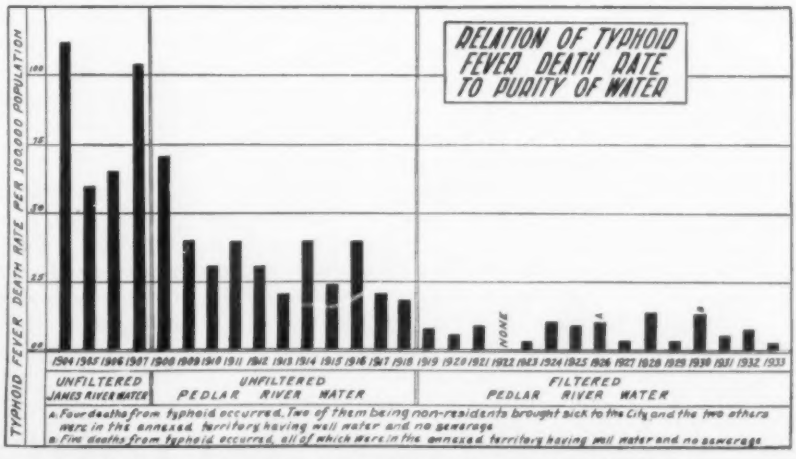
Thawing Frozen Hydrants with Carbide

A NOVEL method of thawing frozen hydrants which has been used successfully in Taunton, Mass., is with the use of lumps of carbide. In cold weather the hydrant man carries a small quantity of carbide with him. It is the same material as is used in carbide lamps. He breaks off a piece that will pass the nozzle of the hydrant, and the carbide will bore a hole through the ice in a few minutes. Then he turns on the water in the hydrant and washes out the rest of the ice. This is much handier than trying to get hot water or steam into the hydrant. If the hydrant is frozen from the top right down to the base, it takes several lumps to thaw it out, but this does not happen frequently. Small pieces thrown in against the operating rod usually free it from the ice rather quickly, so that the hydrant may be opened.

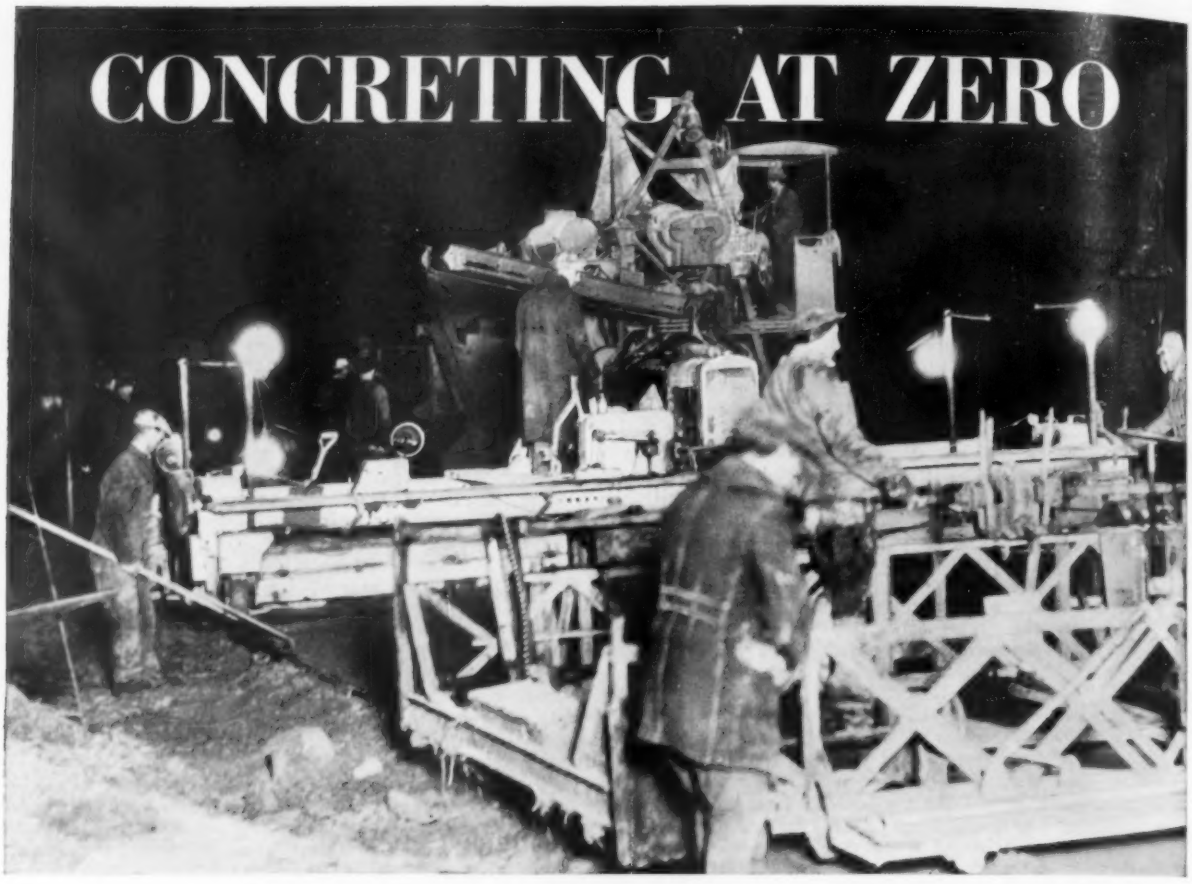
ARTHUR C. KING,
Superintendent, Taunton Water Works.

See The Municipal Index for 1934-35

for reports from 65 cities on Water Rates and Service Charges, Installation Charges, Hydrant Rentals and Sprinkler Costs.


RELATION OF TYPHOID FEVER DEATH RATE TO PURITY OF WATER
TYPHOID FEVER DEATH RATE PER 100,000 POPULATION
100
75
50
25
00
1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933
NONE
UNFILTERED JAMES RIVER WATER
UNFILTERED PEDLAR RIVER WATER
FILTERED PEDLAR RIVER WATER
a. Four deaths from typhoid occurred. Two of them being non-residents brought sick to the City and the two others were in the annexed territory having well water and no sewerage.
b. Five deaths from typhoid occurred, all of which were in the annexed territory having well water and no sewerage.

VALUABLE EVIDENCE FROM LYNCHBURG, VA., CORROBORATING DATA FROM OTHER CITIES THAT FILTERED WATER HELPS REDUCE TYPHOID



Summer job progress in Winter
Heat-curing costs reduced

Concrete temperatures are the controlling factor in Winter work; air temperatures only affect heat and protection requirements. Results depend upon how effectively curing temperatures are maintained, and upon the time required for cement to provide service strength. *The quicker concrete hardens, the less time and expense required for heat protection.*

Winter Advantages of 'Incor'

Through a basic process improvement, 'Incor' Cement cures or hardens 5 times as fast as ordinary Portland cement. Result, heat protection costs 60 to 70% lower, cold-wave hazard minimized, Summer schedules possible even in dead of Winter.

These advantages are particularly important in highway construction. Bridge building can be carried on throughout the Winter. 'Incor' also lengthens the paving season, making it possible to close gaps and complete highway sections which might otherwise lay over until Spring. Traffic isn't forced to use open sub-grade, contractors receive substantial estimates.

Resurfacing a 1½-mile section of Hamilton-Eaton Road in Southwestern Ohio, illustrates these advantages:

First concrete poured December 5th, last December 30th. Finished grading carried 500 ft. ahead of mixer, subgrade straw-covered at night, thawed out in morning with hot water and steam. Water heated by boiler mounted on skids, drawn along by mixer. Concrete placed on grade at 70°, covered with wet burlap and 10" of straw, protected until 600 lb. beam-strength permitted opening.

Beams and cylinders, cured with pavement, averaged 72-hour opening strengths. December 26th night temperatures dropped to 7° below zero; next morning temperature under covering was 44°. *Cores of 'Incor' concrete cut from that day's run, developed 24-hour compressive strength 1509 lbs., 48-hour 2610 lbs.*

In severe winter weather, 'Incor' concrete was ready for service sooner than with ordinary cement in Summer.

Write for 'Winter' Book

A new, illustrated book on Winter construction is now ready. For free copy, address 'Incor' 24-Hour Cement, Room 2200, 342 Madison Ave., New York. 'Incor'* is made and sold by producers of Lone Star Cement, subsidiaries of International Cement Corporation, New York; also sold by other leading cement manufacturers.

*Reg. U. S. Pat. Off.

'INCOR' 24-Hour Cement

Highway Maintenance – Street Cleaning

Grade Separations

DURING the past year, according to the Twenty-Seventh Annual Report of the Board of County Road Commissioners of Wayne County, Mich., construction activities have progressed on five grade separations, three of which were at railroads and two at highway intersections. Upon completion of these projects, the county road system and the state trunk line roads of Wayne County will include fifty-three grade separations, six of which are at highway intersections and the remainder at railroad crossings.

The construction of three of these five grade separations was initiated in 1932, and two of them are now completed. Construction of the remaining two were initiated during the past season and will be completed during the present year.

"FASTEST MAN WE HAVE, BUT NOT VERY THOROUGH"
By Robert J. Day, courtesy of *The New Yorker*

Highway Service and Maintenance, Wayne County

DURING the past year the Board of County Road Commissioners of Wayne County, Mich., which includes the city of Detroit, has maintained 1,062 miles of city streets, county roads and township roads, including bridges and grade separations, scattered over eight cities, sixteen villages and eighteen townships, comprising an area approximately 25 miles square. Of this mileage of roads, 456 miles are country roads, 224 miles state trunk lines, and 382 county-township roads. This latter group are the roads taken over by the country under the so-called "McNitt Act." which provides for the taking-over by the county of all roads outside cities and villages during a period of five years. This mileage represents the first 60 per cent taken over.

In order to economically maintain such a system of roads as outlined, it is necessary to perfect an organization that will be flexible enough to take care of routine maintenance and also be ready for any emergency. The county has been divided into districts, and a foreman-superintendent has been placed in charge of each district. They are in charge of the work going on in their respective districts and are expected to watch all roads at all times to detect when work is required on any of them. Experience over a period of 25 years has taught the County Commission that the old adage, "A stitch in time saves nine," never was truer than when applied to road maintenance. Unless constant attention is given to ditches, shoulders, sewers, catch-basins, bridges, culverts, and especially the road surface, destructive forces such as the natural elements and particularly heavy traffic will soon cause a serious condition, and if constant maintenance is not practiced, the usefulness of the road will become less and less, and in a comparatively short time new construction will be necessary.

The work of maintenance may be divided into two classes—routine work and emergency work. Under the first class is included such work as cleaning ditches, keeping shoulders smooth and free from ruts, keeping catch-basins and gutters clean, keeping the cracks and joints filled with a waterproof material, marking the centerlines and safety stripes at intersections, keeping all warning signs, information signs, route markers and distance and direction signs in a good state of repair, and the mowing of weeds in the highway right-of-way.

Under this heading would also come the maintenance of bridges and grade separations, including such work as painting of structural steel, pointing-up of handrails, repair of concrete abutments and retaining walls, maintenance and operation of pumps in grade separations, and cleaning of pump pits and outlet ditches.

Under the heading of emergency work come the unforeseen things. Chief among these is snow plowing, snow removal and the sanding of slippery places. Also is included the repair of holes which develop suddenly and which might be the cause of serious accidents if not given immediate attention. Floods and wind storms often call for emergency work by the maintenance crews. The pumps in grade separations must be watched closely in case of floods. Work under this heading requires that the superintendents, foremen, truck drivers and laborers be on the alert day and night for signs of sleet, snow, floods or wind storms which might call for their services.

—From the Twenty-seventh Annual Report of the Board of County Commissioners, Wayne County, Mich.

THE TYPE OF BUILDING USED BY TORONTO, ONTARIO, IN 1890 FOR HOUSING THE HORSES OF THE STREET CLEANING DEPARTMENT

THE PRESENT MODERN GARAGE AND REPAIR SHOP WHICH HOUSES AND MAINTAINS THE FLEET OF 82 MOTOR TRUCKS IN TORONTO

NEW WORK OR REMODELING CITY PROJECTS *for Lasting Service*

STREAMLINE

WHEN your plans call for pipe and fittings for any purpose on new work or remodeling city projects, consider STREAMLINE Copper Pipe and Fittings carefully before you decide.

The STREAMLINE method is the most revolutionary advance in piping methods in the last hundred years. It utilizes the working of one of nature's laws — capillary attraction — to form the most permanently tight and strongest joint known.

Absence of clogging rust and freedom from the harmful effects of vibration are but a few of the many reasons why water works officials who are responsible for the return on a very heavy capital investment, have, in STREAMLINE fittings and copper pipe one of the most effective and low cost forms of insurance that they can adopt.

STREAMLINE copper pipe utilizes only that wall thickness required for actual service and under ordinary earth and water conditions will last for generations and for construction purposes will outlast the building in which it is installed. Costly replacements are eliminated.

Pipe which is threaded to connect must have extra wall thickness for that very purpose because when the thread is cut it diminishes the wall and consequently reduces the strength of the pipe. STREAMLINE compares very favorably in cost with ferrous pipe, yet never has to be replaced due to rust or clogging. Its connection is actually the strongest point in the line, while with threaded pipe it is the weakest.

For filtration and sewage disposal plants, for service lines and for general plumbing and heating purposes, STREAMLINE is the ideal material.

Send for Catalog W-3

STREAMLINE PIPE AND FITTINGS

PORT HURON, **CO.** MICHIGAN

DIVISION OF MUELLER BRASS CO.

Sewerage and Sewage Disposal

The Mechanical Cleaning of Grit Chambers

EARLY grit chambers were long, narrow channels, of slightly greater cross-section than the sewer, designed to allow the heavier particles to settle, but to provide sufficient velocity to transport the lighter organic solids. It was necessary to provide duplicate channels so that one or more could be cut out of service during the cleaning period. To clean these channels it was usually necessary to drain off the supernatant sewage and shovel out the accumulation by hand. Owing to the presence of decomposing organic matter, and depending upon the interval between cleanings, this was an unpleasant job. The first attempt at mechanizing this procedure was made about 1900 in Wiesbaden, Germany, where a traveling bucket elevator was installed to remove the grit and to discharge it into cars running alongside at the ground level. Modifications of this type include traveling cranes mounted on tracks over the channels, some using grab-buckets, and others depending upon manual shoveling into the buckets. In one or two cases, as at Cleveland, Ohio, the grit chamber bottom was made into a series of hoppers the same size as the bucket, so that each grab of the bucket would clean out a hopper. No attempt to clean the grit removed was made until the installation at the Northeast Works in Philadelphia. This installation consisted of a suction pump on a traveling crane. The pump removed the grit from the three channels and pumped it into a cleaning trough, hung on the wall of the building, which contained a screw conveyor. After washing, the grit was discharged into storage bins for final disposition.

The nuisance caused by accumulations of grit containing high percentage of organic matter proved that there was a need for a grit-collecting unit which would not only remove the grit from the tank but also free it from organic matter. A unit which has been used successfully for some time in the metallurgical industry for making a separation between particles of different specific gravities was installed in 1926 at the Northeast Works in Philadelphia. This unit proved in a very short time that it would deliver a clean, dry grit directly into cans, carts or other receptacles, without auxiliary handling. Following this demonstration a unit was developed suitable for municipal installation and installed at Harrison, N. Y. This delivered grit of such freedom from organic matter that it was piled around the building and still remains there. The essential features of this so-called detritor are:

1. A square tank, designed to provide a velocity of not over one foot per second for the maximum flow.

2. A flat bottom, with a maximum depth only 6 inches deeper than the invert of the inlet sewer.

3. A mechanism revolving in the collecting tank, carrying the solids to the periphery, where they drop into a sloping aperture which leads to the cleaning channel, located directly alongside the collecting tank.

4. A mechanism in the cleaning channel with draining, which carries the mass of solids up the sloping channel, and allows them to drain free of water. This channel is sloped at 2½ inches to the foot. During the alternating motion of the rakes, a wave action is caused on the upward raking stroke, which floats the lighter suspended matter back into the collecting tank, assisted by a small, fast-moving impeller.

Other types of grit collection and washing consist primarily of the conventional long, narrow channel equipped with a drag conveyor to collect the grit, and a subsidiary conveyor or screw dragging the material up the inclined end of the channel to a point above the water line to provide the washing. One of the later ideas developed for grit collection has been a unit consisting of a series of concentric baffles in a tank, the sewage flowing between and up and over these baffles, the heavy material falling to a cone-shaped bottom.

—From a paper on the mechanization of sewage treatment, presented by EDMUND B. BESSELIEVRE, Sanitary Engineer, The Dorr Co., before a joint session, Public Health Engineering Section, American Public Health Association, and Central States Sewage Works Association.

Safe Sewage Disposal Needed

THE severe drought condition in the Middle West has focused attention on all available sources of water supply. Shortage of water is made doubly serious by unsanitary disposal of sewage into the extremely low watercourses. Few people realize the importance of adequate disposal of domestic wastes. Sewerage facilities, like water-supply services, are taken for granted. It is only in such emergencies as the present that local interest can be aroused.

In every state there are numerous communities where the purity of drinking water is dependent upon sewage treatment in other communities upstream. It is a just obligation upon each community to see that its wastes are so treated or disposed of that they do not contaminate their own water supply or that of other communities. An adequate sewerage syster with a modern sewage disposal plant is urgently needed in hundreds of communities.

The need was recognized by the Federal Government, which allotted $133,000,000 of the Public Works funds for sewage-disposal projects that were deemed essential. Millions more could he spent to good advantage, but unfortunately worth-while projects are destined to lie dormant through lack of public support. The apathy of the public toward projects of such vital concern is amazing. Let some one with a communicable disease expose others and we immediately and emphatically demand isolation of the individual, but we are not equally insistent—in fact, very little concerned—when thousands are exposed to water-borne diseases caused by unsanitary disposal of wastes.

Although a community is sewered and has every house connected, the sewage collected may not be disposed of in a sanitary manner. We need to inquire further regarding its treatment before discharge into a watercourse.

More active interest is needed in matters of such vital importance in our daily lives as safe sewage disposal. A modern sewage treatment plant is an inexpensive utility. It can be made attractive in appearance and free from odors. We need more of them and we cannot well afford to be without them.

Dewatering Fresh Sewage Solids

ALTHOUGH Winston-Salem, N. C., and Dearborn, Mich., have been dewatering chemically precipitated sludge on vacuum filters for some time, it is only within the last two or three years that work has been done on plain settled fresh solids. After a few tests at Baltimore, Md., it was found impracticable to dewater the raw sludge, using ferric chloride as a conditioner. The filter rates were low, the effluent contained a large amount of suspended solids, and the filter cloths clogged rapidly, making continuous operation impossible. Slightly better results were obtained using paper pulp, lime and ferrous sulphate, but the large amount of conditioner necessary made the cost much more than for digested sludge. The age of the raw solids, however, was unknown, the pH was very low, and it may be that better results would have been obtained had the solids been really fresh.

Goudey, in California, found raw sludge easier to condition and filter than digested sludge. He was able to obtain cake containing 65 per cent moisture without the use of admixtures, heating or return of dry cake. The raw sludge cake was thick and granular except for the normal amount of fibers. It had no objectionable odor and dried in the air in about 24 hours. Filter rates were high and the cloth remained clean. He estimated the total fixed and operating costs for dewatering solids to dryness at about $6.50 per million gallons of sewage treated. This was about the same as the cost of dewatering and drying digested sludge.

Preliminary work at Chicago indicated that fresh sludge filtered at higher rates and with less coagulant than was required for digested sludge. At Dearborn, chemically precipitated sludge is dewatered to 60-70 per cent moisture at the rate of 6-8 pounds per square foot of filtering surface per hour. Owing to the excess lime, it is reported this cake can be air dried without odor nuisance.

—From a paper by PROF. G. P. EDWARDS, Department of Sanitary and Municipal Engineering, University of North Carolina, presented before the North Carolina Sewage Works Association.

3 Important POLICE RADIO FEATURES offered by GAMEWELL

1 **Gamewell is prepared to furnish radio transmitting equipment for *municipal*, *county* or *state* police requirements.**

2 **Gamewell-Westinghouse offers the only complete line of radio transmitting equipment designed to meet the special requirements of police work.**

3 **Gamewell is the only company in a position to handle your police radio problem completely and without divided responsibility: (1) *survey*, (2) *sale*, (3) *installation*, (4) *service*.**

For Cities, Counties or States
ABOVE 100,000 POPULATION

Gamewell-Westinghouse Type "CQ" Radio Alarm Transmitter

Designed exclusively for police radio alarm service—100-watt unit will serve cities of more than 100,000 people—capacity up to 500 watts to take care of very large cities or counties. Exclusive unit feature makes it possible to increase power as city grows—starting with 500-watt transmitter, state police can enlarge up to 5-KW without discarding, by adding amplifying equipment.

For Cities
UNDER 100,000 POPULATION

Gamewell-Westinghouse Type "EB" Radio Alarm Transmitter

Only 50-watt transmitter on market designed exclusively for police radio alarm service. "EB" Transmitter gives all features of larger units to cities with limited appropriation having less than 100,000 population. Where city is growing rapidly "CQ" Transmitter may be installed and operated down to 50 watts to comply with Federal Radio Commission Regulations, until city exceeds 100,000 mark.

MUNICIPAL, county or state—no matter what your police signaling requirements are, Gamewell is well able to serve you. No makeshift apparatus adapted from other fields—instead, rugged transmitting equipment specially designed for efficient police radio alarm service. This apparatus is built exclusively for us by Westinghouse, pioneer in radio broadcasting and the manufacture of radio transmitting equipment. It will outlast makeshift equipment and furnish more reliable operation.

Gamewell, pioneer in police signaling apparatus for municipalities, is better able to serve your police radio requirements from start to finish. To deal with Gamewell means that you deal with just one reliable company—no divided responsibility to worry you from start to finish. Yes, we're the only company in the field that can make your *survey*, *sell* you the apparatus, *install* and *service* it—four important functions every police official should keep in mind when contracting for police radio alarm equipment.

And, Gamewell is the one company that can serve all of your police signaling requirements from street signal box and recall system to radio alarm apparatus. Write for our booklets R-783 and R-811.

THE GAMEWELL COMPANY
NEWTON, MASS.

GAMEWELL-WESTINGHOUSE POLICE RADIO

Police – Fire – Safety

What the Motorcycle Cop Can Do Besides Write Tickets

LATE afternoon on the Saturday before Columbus Day in the year 1930, a New York car was bowling southward on the DuPont Highway in Delaware. The driver and his wife were eager to reach the old homestead of his family before dark. They passed other cars, and there were only two ahead of them and the open road, when a remarkably musical siren sounded. It was he—the motorcycle cop. He motioned to the side of the road and then went on to stop the two cars ahead. Having taken care of the leaders, he came to the New York car.

"Give me your license."

The man did so, saying it was pretty tough to come down here to Delaware for the first time in years and have this happen, not only on a Saturday but with Monday a holiday. This was his father's state; he was going to see his uncle and aunt who still lived on the old place; it was getting toward night and he had been driving since early morning; his wife wasn't feeling well.

The officer, never flitting, still was sitting on his motorcycle, unemotionally writing out a great deal of trouble for the couple from Long Island. He seemed not to hear. So the motorist sighed and concluded with, "Well, it's been a lesson anyway."

The officer looked up quickly. "Well, brother," he said, "if it's been a lesson, I'm going to let you go," and with that he tore up the ticket and drove away.

Here it is three years later, yet the incident is crystal-clear, and no part of that incident has ever been repeated for this driver. There is more downright useful traffic information wrapped up in this episode than in the important fact that the fleet of fifty-four Harley-Davidson's and one Indian costs only 1½ cents per machine per mile to operate. In commemoration of the Fourth Anniversary the entire police force of the state of Delaware is reproduced above.

DELAWARE STATE POLICE; 55 MOTORCYCLE OFFICERS

"The State Police of Delaware," writes C. C. Reynolds, their Superintendent, "ever since their inception have been using motorcycles in the enforcement of all laws, especially those in connection with the regulation of speed and motor vehicles in general, and I find them just the thing for our line of work."

A Valuable Report on Police Practices

HEREWITH are some quotations from a current study of actual practices in 300 American municipalities, as obtained by questionnaire and personal investigation:

"The chief of police in American cities lacks the authority that is necessary to build up a department that can enforce the law reasonably . . . to use a strong department effectively, even if he has one. . . . Though the chief has not the power to remove his men, in most cities other men have this power. . . . In 106 of the 300 cities, the chief to be chosen must be a member of the force; in 111 he need not be; in 137 he is protected by civil service."

"In 272 municipalities policemen must be residents, and in 264 they must live within the municipal limits after appointment. In 193 places the merit system prevails; in 57 no examination is required. The need for an intensive character examination cannot be over-emphasized. It should go back to the childhood of the applicant and include a study of his family. . . . Once the applicant has been selected, his development into a real policeman depends on two factors. . . . The selection of detectives is somewhat of a problem. . . . The traffic squad is the reception committee of the municipality."

"The argument generally brought against having two men in the patrol car is that policemen are inclined to discuss subjects other than their duties."

For further information about this publication, address THE AMERICAN CITY, 470 Fourth Avenue, New York.

Shall Fire Apparatus Notice Red Traffic Lights?

WHETHER or not fire apparatus should be made to observe the red lights is a matter of general interest. In most cities the fire departments are granted the right-of-way, but both the National Conference on Street and Highway Safety and the National Safety Council believe that the driver of an emergency vehicle responding to an emergency call should, on approaching a red or stop signal or sign, slow down and then proceed cautiously past the signal.

W. H. Gardner, Chief, Underwriter's Fire Patrol, Kansas City, Mo., has this to say concerning traffic lights: "It appears that a few ambitious light salesmen made a sweep of the country in 1928-29-30. Installations became numerous in the larger cities, and perhaps we have far too many traffic lights in the United States. No doubt some have been discontinued because of their impeding effect on traffic, but the fact remains that traffic lights have been generally accepted throughout the entire nation, and for the future it appears quite evident that the red traffic stop light will be the means of imposing a definite strain on fire apparatus because of the weight, length of wheelbase, and relative lack of acceleration in pumpers, hook and ladder trucks and other heavy fire apparatus."

Mr. Gardner makes the sensible objection that if fire apparatus is compelled to pause on a red light, drivers of other vehicles entering the intersection on the green light may assume that the fire truck is giving them the right-of-way and waiting for the light to change.

Controlling the Force

THE matter of equipment, says Chief Richard W. Morris, of Geneva, N. Y., is a serious problem to the average chief of police, for on the adequacy of equipment hinges the success or failure of a police program. It is important not only to the policemen but to the taxpayers.

A survey of 300 cities developed these facts:

Radio

In cities of 200,000 or more, 31 have police radio and 3 have not; 100,000-200,000, 10 have radio and 29 have not; 50,000-100,000, 19 have and 48 have not; 25,000-50,000, 7 have and 55 have not; up to 25,000, 1 has and 167 have not.

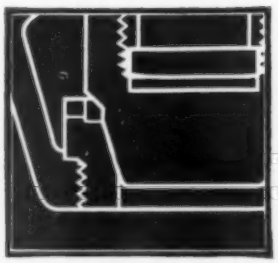
"Radio is the most effective weapon of the local police against the criminal," was the dictum of the Police Chiefs at their convention in September.

Street Signal Boxes

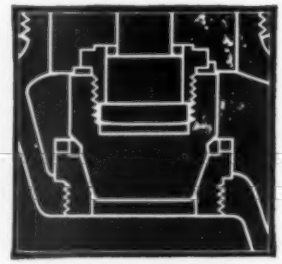
This subject is treated in detail on pages 45 and 46 of this issue.

"LIFE EXPECTANCY" INCREASED BY CRANE PLUG DISC VALVE DESIGN

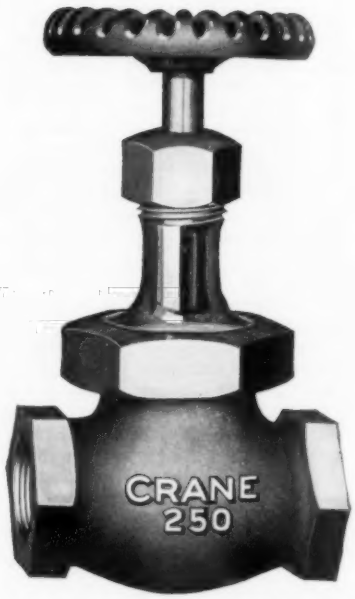
Insures longer life . . . free flow . . . prevents sticking



Angle and width of seating surfaces are *exactly right* to insure free operation and long life.



Plug discs and seats are ground *together in pairs* to secure tightness (permits regrinding).



No. 212-P Crane Globe Valve for 250 lbs. steam pressure at 500° F.

● Why not install valves that are *designed especially* for heavy duty service? The Crane plug disc globe and angle valves are made of specially selected metals that will stand severe service. The seating surfaces are at the *right angle* and of the proper width to insure long life, free flow and to prevent sticking. You can throttle the Crane plug disc valve to any desired flow . . . and it'll take the punishment month in and month out!

Many are specifying these superior plug disc valves even *for ordinary service!* Try them—you'll save money, prevent shut-downs and costly repairs.

No. 382-P Crane Globe Valve for 300 lbs. steam pressure at 550° F.

CRANE

CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO, ILL.
NEW YORK: 23 WEST 44TH STREET
Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

Did you know that these topics were covered in last month's issue of The American City?

Billions for Construction

"To those who say that our expenditures for public works and other means for recovery are a waste that we cannot afford, I answer that no country, however rich, can afford the waste of its human resources," said President Roosevelt, as reported on the cover of the October issue of THE AMERICAN CITY. Does he mean it? On October 19 a tentative public works and housing program to the sum of "between five and seven billion dollars" was forecast in Scripps-Howard newspapers. This is in line with what THE AMERICAN CITY has consistently advocated, the most recent occasion being at the close of the 25th Anniversary article on page 53 of the September issue, when the probable need for an expenditure of five billions was predicted.

Cleaning Screens and Burning Sludge Gas

The common type of sewage screen employs a raking mechanism operated on the float principle, which cleans the screen when needed. The advantages of this type of screen are stated on page 11 of the October issue. On this same page the collecting of the gas from sludge digestion and using it for engine fuel, heat and light are discussed, with some specific examples. From 8 to 11 cubic feet of gas are produced during the digestion of one pound of solids from domestic sewage, or 0.4-cubic foot per capita daily.

Cheap But Good Road Surfaces

When cost prohibits new paving plans, the existing surface materials can be reconditioned or a new durable waterproof surface course can be built up at the cost of graveling. This timely process is described in detail on page 43, October.

That Tough Problem Sludge

Odors and effluents go but sludge remains, yet there are fewer data on what is done with sludge than with any other phase of sewage treatment. To provide these data it is necessary to measure sewage flow, tributary population, and the suspended solids of raw sewage and effluents. A chart on page 55, October issue, shows the wide fluctuation in the quantities of sludge-producing solids in sewage of varying characteristics.

Cost to Clean Miami Streets

Two pick-up sweepers, nine white wings with a truck to pick up their sweepings, comprise the cleaning force for the concrete and asphalt streets of Miami's 46 square miles. Miami's population is 110,000, and twice this in December-March. How they do it and what it costs are given on page 60, October issue.

The Electric Plants of Michigan's People

The 52 municipal electric plants of Michigan have been inspected and reported on in detail by the Michigan Municipal League, and the findings with respect to plant conditions, meters and the sale of appliances are outlined on page 61.

Where an Incinerator Costs

First cost of an incinerator is not the big item—operating cost is that. Equipment accounts for half the cost of a plant, and a saving of 10 cents per ton in the operating cost compounded at 4 per cent for 10 years pays for the equipment, or furnishes the price for a new incinerator.

Trickling-Filter Fly

Trickling filters built with open walls and using large-sized ballast provide nesting quarters for the little fly that the winds may carry a mile away and to which house screens are accessible. Sanitary engineers have not settled on one method for controlling these flies; but on page 68, October, burning, covering and flooding are favored above birds, spiders or leeches or kerosene and orthodichlorobenzene.

German Superhighways

A tar-bound macadam road 40 feet wide and designed for 75 miles per hour was recently completed between Bonn and Duesseldorf, as described in the October issue on page 69. Highways now under construction have two independent 23-foot roads separated by a 17-foot unpaved strip planted with evergreens to dull the glare of headlights.

Uniform Treatment of Traffic

Uniform practice toward public safety includes uniformity in the design of the highway, signs and signals, habits of drivers and pedestrians and police methods. The time seems ripe for the measures proposed in October on page 73, because: the public wants traffic accidents reduced; there has been some preparation for a national standard of traffic laws and signals through the work of the National Conference on Street and Highway Safety; and rural-highway design is being notably improved.

Cities Should Inspect Vehicles

The common-sense, self-liquidating and successful Memphis plan of compulsory vehicle inspection has started what appears to be a real movement. Des Moines and the states of Maryland and Delaware have already followed suit, and interest is widespread. How Memphis does it is described on page 74, October, and valuable additional information is given on page 64 of this present issue.

Status of Sodium Vapor

Light travels fast. The October issue states that the sodium lamp will be most useful on the rural heavily traveled highway. November reports a new installation right in the city of Lynn. Is the sodium lamp likely to put the incandescent out of business? What are the efficiencies, and will they be considerably higher in the near future? What are the most recent developments? See page 111, October issue.

Back issues of THE AMERICAN CITY *may be obtained at* 35 *cents each—or a subscription may be placed at* $2 *per year to include the October issue, in which the articles mentioned above and other valuable material appeared.*

Park and Street Maintenance

East Chicago, Ind.

This picture was taken last winter . . . but it serves as a reminder that cold blustery days and scenes like these, are just ahead. For the annual battle against snow, East Chicago has equipped one of its Allis-Chalmers Model "U" tractors with a snow brush. It is shown here removing that last layer of snow which the big plows can't touch without rubbing pavement. This also makes a good outfit for cleaning sidewalks and ice skating rinks. When there is no snow, the brush can be used to keep streets, alleys and sidewalks clean-swept and tidy.

Wauwatosa, Wis.

Cleaning snow off city sidewalks is an easy task for Wauwatosa's Model "U" tractor and V-Type plow. Weighing only about 3,000 pounds, the tractor "travels light" on concrete walks. It easily negotiates curbs and gutters . . . is narrow-gauge enough to operate wherever needed. No snow-covered sidewalks here to invite accidents and slow down an entire city's business. Clean sidewalks and streets are a paying investment. Wauwatosa, the "City of Homes," does not leave all the burden of sidewalk snow removal on its property owners.

For Your City . . .

This winter looks like a "deep one," according to the experts. Snow storms come in a hurry . . . leaving no time to check equipment or get it in readiness. It pays to have efficient snow removal equipment—to fit your particular needs. The A-C Model "K" tractor, for example . . . shown here with blade-type plow . . . is the choice of many cities. Let an Allis-Chalmers dealer show you the types of equipment available . . . and explain the famous "More Value" features of A-C tractors and road building machinery.

ALLIS-CHALMERS
TRACTOR DIVISION—MILWAUKEE, U. S. A.

NOVEMBER, 1934

Vol. XLIX, No. 11

The American City

470 Fourth Avenue
New York

35 Cents, $2 a Year

How Not to Solve the Taxation Problem

The Plight of the Ohio Cities

WHEN, a year ago, the voters of Ohio, influenced by specious arguments of special interests, approved a ten-mill constitutional limit on property taxes, thoughtful municipal officials were apprehensive of the consequences. Subsequent developments have shown their apprehension to be well founded. The frenzied and futile attempts to extricate Ohio's local governments from their financial plight were outlined by Earl Hagerman, Director of Finance of the city of Dayton, at the recent annual convention of the Municipal Finance Officers' Association:

"The problem was then placed squarely up to the legislators as to where additional revenues could be secured. State officials became very much alarmed, and the Governor began calling special sessions of the Legislature. Attempts to secure legislation to create revenues from other sources is where the problem began. Real estate owners who had been relieved of a large portion of their tax burden offered no support to the legislators. After several special sessions of the State Legislature, with campaign consideration becoming tremendously important, it became hopelessly deadlocked and was ordered to adjourn by the Governor.

"A survey was then made which indicated that in several of the municipalities mandatory bond charges would exceed the 10-mill limit, while in many other cities bond charges plus the 4.85 school operating minimum, would leave no funds available for operating expenses of municipalities and county governments. A study by the Ohio Municipal Finance Officers' Association showed that approximately 75 of the 110 cities could not legally levy any funds for operating expenses. The Governor again called another special session of the Legislature and succeeded in having them repeal the laws guaranteeing the schools the 4.85 for operation. This measure, of course, was no relief. It only placed the schools in the need of funds and did not provide much relief for the cities and counties.

"This session of the Legislature so amended the statutes that additional tax levies and deficiency bonds payable outside the 10-mill limit could legally be placed before the voters for their approval. Several of the larger cities have recently secured such approval and have issued deficiency bonds enabling them to continue operations until January 1, 1935. How Ohio political subdivisions will be able to carry on adequate governmental functions after that date is entirely up to the State Legislature. The Governor has indicated that no consideration will be given this problem until the middle of November, which will follow the general election. One must not forget that legislative officials are always willing to reduce taxes, but will hesitate to shift the tax burden upon the shoulders of unwilling constituents.

"I believe it is the duty not only of public officials, but of all others who are interested in maintaining adequate governmental functions, to give serious thought as to where additional revenues might be secured before endorsing measures which bring about tax limitations. After all, one of the purposes of organized government is that of furnishing collectively those services which its citizens should have and which can be rendered at much less cost than if they were obtained individually. In addition, obligations which have been incurred in good faith must be paid if the credit of political subdivisions is to be maintained.

"Permit me to present a portion of an article appearing in the Dayton *Daily News* under date of September 12, which quotes Governor White as follows:

"'This financial problem cannot be solved by a burst of oratory and a wave of the hand at a political rally or by an evasive plank in a party platform. In the first place, the statement that the financial crisis which faces the communities of Ohio can be remedied by economies without further new revenues is unreasonable, false, and misleading. It cannot be done.'

"I believe much of our difficulty has been brought about by articles and cartoons appearing in various newspapers and magazines which have given the public the impression that if dishonesty on the part of public officials and the inefficient operations of government could be eliminated, millions and millions of dollars could be saved and taxes greatly reduced. . . . There is no doubt that there exists some inefficiency in the operation of government and no one for a moment should hesitate to eliminate dishonesty; however, such enormous savings are probably more mythical than real.

"Tax limitations undoubtedly serve to reduce taxes upon real estate. This does not mean, however, that the so-called 'little fellow' or small home owner is being relieved of his tax burden. It is often amusing to those who have made a study of taxation, to find how the 'little fellow' becomes terribly concerned about a slight reduction in his real estate taxes, when one understands that his interest has been aroused by propaganda which has probably been furnished by those who have extensive holdings in downtown and valuable real estate, and who benefit tremendously when real estate taxes are reduced.

"If adequate governmental services are to be maintained, the revenues lost by reason of reductions in real estate taxes through tax limitations must be replaced from other sources, and it usually falls back upon the 'little fellow' in the form of sales taxes, special assessments, and other measures, with the final result that he pays more taxes than previously, although in a different form.

"The state of Ohio faces the worst financial crisis in its history at this time, and it has been brought about primarily by tax limitations."

Waste-Disposal Service in Miami, Florida, Proves an Asset

Incinerator Located Near Center of Population Develops Play Area from Old Dump

WHEN Miami began to develop so that there was need of some cleanly method of disposing of the refuse of the city, it was decided to build an 80-ton incinerator on the outskirts. Since that time, in 1922, the need for greater capacity has led to the construction of another 80-ton unit and five additional 60-ton units at the same site. The city that required this facility for the disposal of its household wastes was not growing in one direction but was encircling the incinerator, so that now the incinerator site is within 1,000 feet of the center of population of Miami.

There are residences within 150 feet of the incinerator, and the Jackson Memorial Hospital comes within 400 feet of the incinerator on the other side. For several years the householders have not complained of any nuisance from the plant; to be sure, one might argue that they have become used to whatever odor there may be in the vicinity, but the hospital officials and the patients on the other side are not likely to let obnoxious odors disturb them without complaint. Even though the plant is even now somewhat overloaded and produces smoke at times, it is well operated and effectively destroys the waste materials delivered to it.

Income for the Plant

Efficiency of operation of an incinerator has been claimed to be somewhat nebulous at times, but Miami has solved the problem in an unusual and profitable manner. It is necessary to boost the pressure of the water in the mains close by the incinerator, and so the Municipal Wastes Division saw no reason why it could not furnish the steam for the steam-turbine-driven centrifugal pumps from the waste heat of the incinerator. Consequently, a steam boiler installation was made. It requires more skill, more care and more nearly constant attention to operate an incinerating unit where a constant pressure must be maintained in a boiler, so only the better operators are permitted to work on the two units that are now operated for steam production. To be assigned to one of these units, where it is necessary to watch the red hand on the steam gage constantly, is a mark of honor and is productive of some competition on the part of the Negro labor at the plant. Thus all units benefit from better firing and operation because of the steam production. Further, for the benefit of the taxpayer the Division is reducing the cost of waste disposal by selling steam to the Miami Water Co. and also to the adjacent hospital. The income from the water company runs between $1,800 and $2,000 a month, and about $2,400 a year from the hospital. Formerly it cost the hospital about $1,000 a month to operate its steam plant, with the attendant bother.

Further income for the Division is derived from service furnished to the cities of Miami Beach and Coral Gables. Miami Beach formerly hauled all its garbage to sea in a $50,000 scow, but found that the method was costly and generally unsatisfactory. A contract was made with the city of Miami for the incineration of all Miami Beach garbage for $1.50 a ton. The garbage is collected by the city of Miami Beach and delivered to the Miami incinerator. This nets the latter city about $9,000 a year. Likewise, the city of Coral Gables pays $200 a month for the incineration of its municipally collected garbage, which it delivers to the newer and small Miami plant located in the Coconut Grove section.

The Old Dump Has Become a Park

The Municipal Wastes Division has attracted the attention of the nearby population most favorably by the creation of a park area on its old dump, where clinker and other non-combustibles were disposed of until the area was brought to grade. It was topped with good soil, sowed to grass, some trees planted and a four-hole golf course and a diamond ball field built and lighted for night playing, and two industrial leagues play double-headers there several nights a week. No extra labor was required for this work; the regular labor handled the grading and planting in temporary slack periods. Property owners in the vicinity claim that the play fields and park area have increased the value of the land thereabouts. This is quite contrary to the claims of local civic organizations and chambers of commerce even in industrial districts, who feel that the location of an incinerator in their particular section would completely destroy property values.

The present park area is about 5 acres and there are 26 acres nearby under reclamation. Beyond the present reclaimed area is a 2-acre plot which is profitably being prepared for future dumping of non-combustibles. The plot is good lime-rock, from which most of Florida's best high-speed highways are built. The city has arranged with a contractor to excavate the lime-rock for 30 cents a yard for street maintenance and reconstruction. Thus the city has delivered to it for a small sum the material it needs for street work and at the same time is creating the future ash-dump for the incinerator.

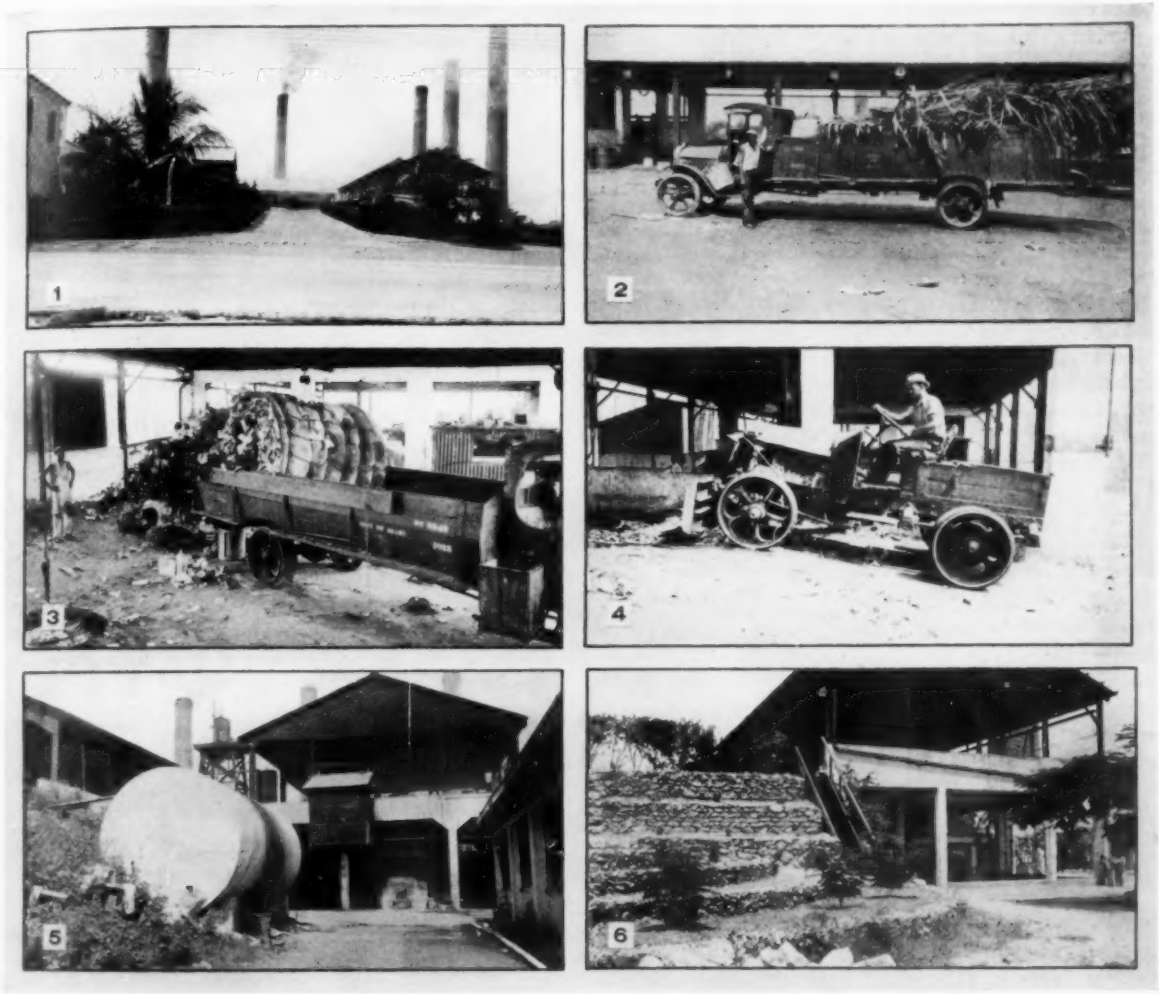
Before outlining the collection system, it is desired to call attention to the salvage system used at the incinerator. The city does not believe in an elaborate salvage system, with conveyor belts in dark basements where bottles and rags are picked out by human derelicts, but the laborers working at the incinerator are permitted to salvage materials that have immediate sales value, providing that they do not take undue time from their regular labors. The proceeds from salvage go into a fund for caring for laborers when they are ill or out because of accident. The city has no other fund for this purpose.

Collection Service

The present collection service provides removal of garbage and rubbish from residences at maximum intervals of 4½ days. Garbage is collected from restaurants, hotels, produce houses and fish houses nightly. The owners of the commercial institutions pay for service four nights a week and receive free service two nights a week. They pay at the rate of 10 cents per can or barrel collected.

wheelbase extended in the city garage and a special wood body built on.

A novel method of unloading the trucks at the incinerator is worth mentioning here. Each truck carries a chain net of about 15-inch mesh, the longitudinal chains of which are attached to the truck floor at the tail-gate. The net is spread over the floor of the truck with a covering of burlap, and the forward end of the net is carried up the front of the body and attached through one ring



HANDLING THE TAXPAYER REFUSE IN MIAMI

1. Entrance to the main incinerator group. The first unit was built far from the center of the city, but the growth of the Florida metropolis has made this site close to the present center of population. 2. One of the standard collection trucks on the scales at the incinerator. 3. Unloading a collection truck by means of the chain net. 4. The pusher truck cleaning up after a truck has delivered its load. 5. The steam unit of incinerators 21 and 22, showing the waste-oil tank in the left foreground, and the scrap-iron bin, in the center, for non-combustibles. 6. The Coconut Grove incinerator, showing the terraced gardens

Twenty Mack and 1 GMC truck of 2½ tons capacity with 15- to 17-cubic-yard bodies are used for collection. The white drivers act as foremen, each with two or three Negro helpers. The character of the drivers is above the average, for the Division believes that courtesy where the Division comes most closely in contact with the householder can best be maintained by a good class of drivers. They, and all other workers in the Department of Public Service above the grade of Negro laborer, are on civil service and are not subject to the whims of political preference. The trucks are purchased as new chassis, the

above the top of the body. When the truck reaches the incinerator and has been weighed, a 100-foot rope run through a pulley is attached to the ring and the truck is driven ahead. The load is thus automatically rolled up and off the truck, making it possible to pile the loads up and at the back of the dumping floor—a thing that is not easily done with gravity or power-dumped trucks.

The Growth of the Incineration Plant

There are now seven Nye circular furnaces in the Miami plant. The first unit, No. 9 and 11 dumping floors, was

built in 1922, and other units were added rapidly just behind the demand for their capacity during the Florida boom. In 1926 the stack of No. 19 and 20 was blown over during the hurricane, injuring several and killing two employees. This was quickly rebuilt, since it serves also No. 16 and 18. Unit 12 and 15 supplies the steam to the hospital, and No. 21 and 22 supplies steam for the water-works pumps. The boiler pressure is maintained at 125 pounds. In case there is difficulty in extremely wet weather, waste crank-case oil from garages within the city is collected and used to boost the two steam-producing units. This happens only about twice a year.

Operation of the Incinerators

Every load of refuse is weighed at the top of the approach drive and recorded with the tare weight of the truck, so that the total amount of material delivered to the plant is known for every day of operation. The truckman is then directed by the plant foreman to dump at some particular unit, either because of the character of the load or because that unit requires more fuel.

The labor force of the incinerator consists of a total of 25 Negroes and a white foreman for each of the three 24-hour shifts. There is also a white operator for the truck-tractor, with a bulldozer for each shift. This machine is most convenient for maneuvering the material into the firing holes. It is a regular bulldozer except that it is not quite as wide and has a heavy chain slung below the lower edge of the bulldozer plate to catch small material.

From 300 to 500 loads of varying sizes are delivered each week by private trucks. These are sorted out according to the type of material, and loads of wood chips from a woodworking plant are welcomed, particularly in wet weather.

In 1925 a 65-ton and a 20-ton Nye plant were built in the Coconut Grove district. At both plants each unit has a scrap-iron bin hung over the side, into which the laborers at the dumping floor toss tin cans and other non-combustibles. When the bin is full, the bottom doors are tripped and the contents emptied into a truck, which hauls them to the dump. Of course a considerable number of tin cans show up in the clinker when the fires are pulled over once each day. This is inevitable, and the cans are loaded with the clinker and hauled to the dump.

The booster plant on the water line, which is supplied with steam by the incinerator, has two DeLaval centrifugal pumps, one a 3-mgd and the other a 5-mgd. They are both operated by DeLaval steam turbines. Two new 9-mgd units are now being installed.

Service Data and Costs

The cost of collection for the fiscal year ending June 30, 1934, was $1.93 per ton. A total of 49,668.94 tons was collected—10 per cent from the curb and 90 per cent from back yards. City crews collected from 25,235 private homes, 2,881 apartment buildings, or 16,987 apartment units, and 3,409 hotels, stores and restaurants. The collection equipment traveled 149,462 miles in this important service to the comfort of the community.

The disposal of this waste material by incineration cost 64 cents per ton at the 20th Street incinerator, and 30 cents per ton at the Coconut Grove incinerator, or an average of 58 cents for all the material incinerated. A total of 66,247.76 tons of refuse was incinerated, of which 49,668.94 tons was delivered to the incinerators by city trucks, 6,467.82 tons by private trucks, 6,305.00 tons by Miami Beach trucks, and 3,806.00 tons by Coral Gables trucks.

The collection and disposal of all refuse of the city of Miami is done by the Division of Municipal Wastes of the Department of Public Service.

Sub-Standard Housing and Tuberculosis

A STEADY increase has taken place during the last four years in the number of tuberculosis cases reported each year to the Health Department of Pittsburgh. From 625 cases in 1929 the number grew to 1,093 in 1933. "The evil but entirely logical effects of the continuing depression must be considered as a primary contributing factor," in the opinion of the Public Health Nursing Association. This contributing factor of depression includes lowered living standards of improper and inadequate food, and lowered housing standards, especially for those who have been forced to become recipients of unemployment relief. The fact that 33 per cent of the total cases coming under the supervision of the P.H.N.A. last year were residents of the Hill District, notorious for its sub-standard housing, gave reason to suspect that bad housing and insanitary conditions have some relation to those factors causing tuberculosis.

In the summer of 1934 a study was made by the Pittsburgh Housing Association of the housing conditions of 392 tuberculosis patients living in the Hill District and receiving care from the P.H.N.A. Complete information on sanitation, light and air, needed repairs, cellar or basement living, etc., was secured on 372 houses. A summary of the information disclosed the following facts:

43% are in need of major structural repairs. One out of seven houses was unfit for use.

33% had cellar or basement living rooms. One out of every six used the cellar or basement for sleeping purposes.

30% of all the living and sleeping rooms were without adequate light and air.

30% of the dwellings had defective plumbing including defective water-closets, broken sewer or water lines or sanitary fixtures.

In 71 instances, two more families were living where facilities were intended for only one family.

There were found 81 cases of overcrowding, some more serious than others.

The following are examples of some of the more serious overcrowded conditions:

Shipton Street—2 families composed of 11 persons were living in 3 rooms.

Beebe Street—13 persons, 3 families, were found in 4 rooms. The house had defective plumbing and the rooms were dark.

Pasture Street—10 persons were living in 4 rooms. Five double beds were in two sleeping rooms.

Linton Street—3 families were living in a one-family dwelling; a cellar room, with no window, was used as a bedroom.

Whether or not bad housing can be considered as directly causing tuberculosis, the fact remains that the increased incidence of tuberculosis has been found to accompany the breakdown in living standards and to follow particularly closely the breakdown in housing standards.

JOSEPH P. TUFTS,
Executive Director, Pittsburgh Housing Association.

Ready Market for Dry Sludge from Separate Digestion Tank

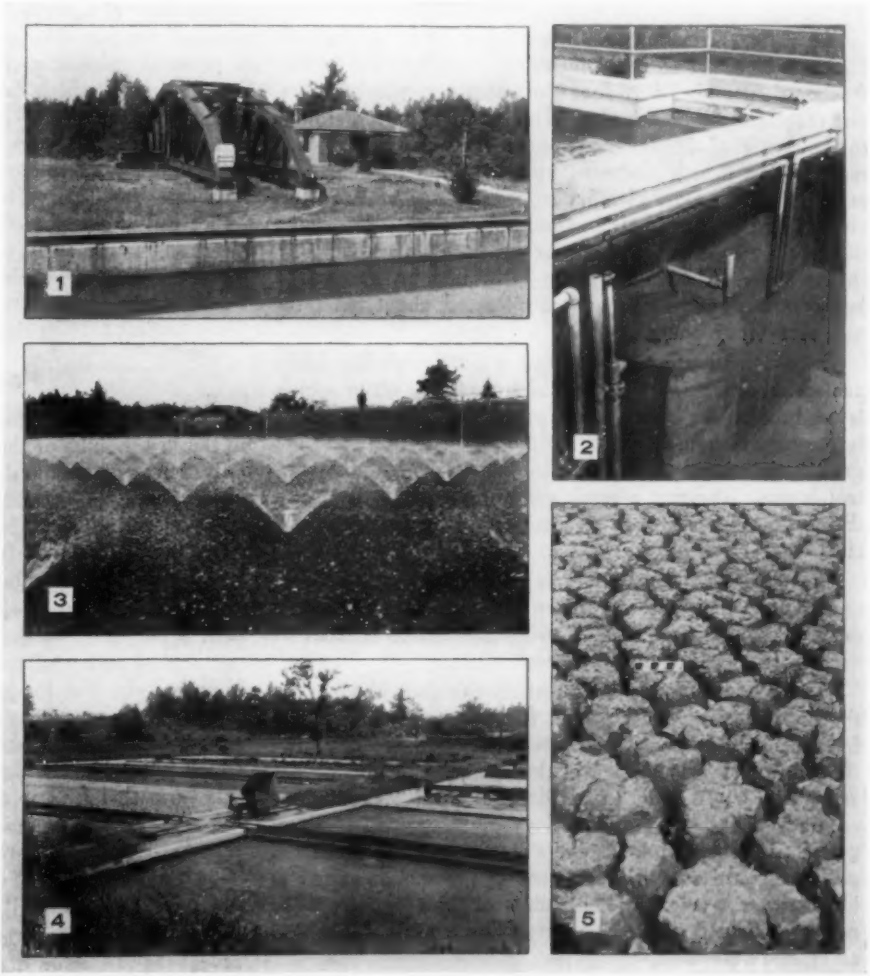
Greensboro, N. C., Disposes of All Sludge at $2.50 a Ton

PULVERIZED dry sludge from the sewage treatment plant at Greensboro, N. C., finds a ready market among the farmers of the district at a standard price of $2.50 per ton, and the farmers haul it away in their own trucks or wagons. Prior to its disposal or sale the sludge has, through the production of gas in the separate sludge digestion tank, furnished the heat to aid its own digestion through use of the gas under a hot water boiler which furnishes heated water to the digestion tank, and in the winter heats the pump station as well. Thus it can be said to have done its work before becoming an asset in cash to the credit of the plant.

Preliminary Treatment

The present plant was placed in operation December 1, 1930, and has operated successfully ever since. The sewage is received at the plant through a 36-inch outfall line which delivers the raw sewage to a bar screen with ¼-inch bars spaced 1¼ inches apart. This Link-Belt bar screen is automatically cleaned, but because of the small amount of material ordinarily removed, it is started manually through the Crouse-Hinds control only three or four times a day. The screenings are discharged by the screen onto a drainage tray, from which the dried screenings are removed and placed in galvanized iron trash cans, which are emptied into the digestor when a sufficient number of the cans are filled.

From the screen the sewage flows by gravity to two Dorr Detritors for the removal of any grit or sand. Little material is removed by these units except after heavy storms, when there is infiltration of water through poor joints in a marshy section. There are separate storm sewers which discharge direct to watercourses.



SCENES AT THE GREENSBORO TREATMENT PLANT

1. The control house and digester from the bridge of the clarifier. 2. The siphon and dosing tank, showing the tank filling in the background and the nearer tank almost empty. 3. The sprinkling filter in action. 4. General view of the sludge drying beds taken from the sludge trestle. 5. Dried sludge in the beds

Low-Lift Pumping Equipment

The sewage then flows to a sump 10 feet deep, having a capacity of 30,000 gallons, from which it is pumped to the primary settling basin by four Yeomans ejector pumps with Westinghouse motors. Two of the pumps are of 2 mgd capacity, and the other two, which are variable speed units, are of 2½ mgd maximum capacity. A Builders Iron Foundry venturi meter measures all the sewage pumped at the plant, thus giving a valuable record for studies of the operation of the plant. The average dry-weather pumpage is for a period of 13 hours a day.

The operation of the pumps is controlled by a float switch which turns on a red light and rings a bell, indicating that the pump, which has been started automatically, has reached its speed and it is time to start another pump. The reverse is true when the sump level is lowered; then a green light shows that a pump should be cut out. Each pump has a check valve on the discharge line to prevent running the unit backwards when the power is cut off for one pump and another is still running. The discharge header for all the pumps is a 30-inch cast iron line 1,000 feet long leading to the primary settling tank.

In the basement of the pump house, where the pumps are located with tight glands and stuffing-boxes, there is a Kewanee Type R hot water boiler for heating the pump house. It is fired with gas from the sludge digester.

The Primary Settling Tank

The primary settling tank, measuring 70 x 70 feet and 12 feet 6 inches to 15 feet 1 inch deep, with 1 foot 6 inches freeboard, contains a 70-foot Dorr clarifier, which makes one revolution in 33 minutes. The sludge is moved slowly to the center of the basin to a sump, from which it is removed by a 4-inch Yeomans ejector to the digester. If at any time the Dorr clarifier stops, a horn sounds in the control house and a bell in the pump house. The cause of stopping is usually grease on the track or an overload in the tank. The sludge pump is located in the control house next the digester, and is operated about ten minutes every four hours.

The control house also contains a Pittsburgh Equitable gas meter, measuring all the gas from the digester which is used to fire the boiler in the pump house and the boiler in the control house for heating the digester itself, and the gas that is wasted through a pipe in the roof of the control house. There is a scrubber in the gas line from the digester to the boilers to remove any heavy foreign material.

The water for the digester is heated to about 152 degrees Fahrenheit, and the return water records about 142 degrees. These temperatures are registered on a chart of a Bristol recording thermometer.

The control house also contains the switchboard for the control of the clarifier and the digester, and a dry feed machine made by Wallace & Tiernan for applying Nuchar to the raw sewage at the rate of 160 pounds per 24 hours for a flow of 1.6 million gallons. The activated carbon blackens the walls of the various basins and channels through which the sewage flows, and the black deposits are very obvious on the top of the trickling filter at about the mid-length of the radius of the spray from the nozzles. The Nuchar is expected to control odors and aid digestion.

The Digester

The Dorr separate sludge digester measures 60 feet in diameter and 23 feet 6 inches deep. The stirring paddles make one revolution in 18 minutes. The heating pipes are 2 inches diameter, and the coils are placed 6 to 10 inches from the wall and start at 24 inches from the floor of the tank. The pipes are spaced 2 feet apart and reach to a height of 8 feet in the tank. The average production of gas is 13,000 cubic feet per day.

The Two Sprinkling Filters

Sewage flows by gravity from the clarifier to one of two double dosing tanks equipped with Pacific Flush Tank dosing siphons. The dosing periods are about 3 minutes long and at from 5 to 30 minutes' intervals.

The headers for the sprinkling filters are 24-inch cast iron mains laid about 1 foot beneath the surface of the stone. The laterals are 6- and 4-inch lines on which the nozzles are spaced 11 feet 8 inches on centers. There is a total of 7 feet of stone over the filter underdrains, the bottom 2½ feet of 3-inch stone and the remainder of 2-inch stone. The two beds cover 1.9 acres and drain toward the center of the filter area, with 3-foot open galleries at the ends for ventilation. The two filters are alternated every three months.

Secondary Settling Tank and Disposal

The flow of sewage from the trickling filters, highly nitrified but not always clearer than the influent because of periodic unloading of the filters, flows to the secondary settling basin, which is equipped with a Dorr clarifier. The effluent from the secondary settling basin shows a distinct clarification from the influent to the basin at all times, and flows to South Buffalo Creek through a 30-inch cast iron line. The water of the creek is normally rather turbid and the effluent from the plant is somewhat clearer than the creek water. While there are no fish in the creek above the plant, owing to heavy discharge of trade wastes, there are immediately about the sewage plant outfall a large number of terrapin and fish.

Sludge Disposal

The sludge from the separate digestion tank is drawn in the dry months of the year so as to leave the tank with only 5 feet of sludge during the winter, when the sludge accumulates. The 8-inch cast iron line from the digester leads to the six drying beds, into which the sludge is run to a depth of 14 inches. It normally requires 25 days of dry weather to dry the sludge sufficiently for easy handling.

Each bed is equipped with an industrial railway track with a turntable at the main track running between the two sets of beds and leading to the 5-foot trestle where it is unloaded. The loading is all by hand, and man-power is used to move the narrow-gage side-dump cars. The sludge is unloaded into the hopper of an old thresher, which pulverizes the dry sludge very rapidly, and it is in this form that it is sold to farmers for $2.50 a ton, finding a ready market among those who haul it away themselves. The sale amounts to about 160 tons per year.

The plant is located 1½ miles from the city limits and 4 miles from City Hall, yet has city water for all uses at the plant. It is operated under the direction of C. W. Smedberg, Director of Public Works.

Street-Signal Boxes and the Patrolman in the Age of Radio

By HERBERT A. FRIEDE

Superintendent of Fire Alarm, Washington, D. C.

RADIO for police stands out as the most important step forward that any city can take right now. There is greater interest in police radio-alarm systems this year than during several past years put together. They are no longer regarded as something that the large city alone can afford. The 50-watt transmitters of today are extremely practical for the city of 100,000 population and smaller. Small cities and towns have found that these systems are within reach of their purses, and that they require no highly skilled technicians, and only a modest outlay for maintenance. And is it any wonder that appropriations have been made available quickly by an incensed citizenry, even during these times when budgets have been so badly cut?

All this has brought up in one city after another that is contemplating installing a police radio alarm system the question of the importance and the relationship to radio of the street police signal box and the recall system which has so long and faithfully served the police departments of this country. And this question has produced some weird and impractical answers from well-meaning lay officials. We have seen the ridiculous spectacle in the early days of police radio of a few large cities completely eliminating the foot patrolman and discontinuing their street box and recall system.

It has come to my personal attention that after a change in the administration of one city which had installed a police patrol system that had operated successfully for a number of years, the new mayor conceived the idea that the patrol system was antiquated and should be abandoned and radio installed. The lieutenant of police in charge of this station, a capable man, gave me the information that answers the question. The system has been neglected and no attempt made to install additional boxes, which were badly needed. My recommendation to this city was to extend the present police control boxes, and properly maintain the system, which would then become an important and dependable part of the policing system.

Police radio systems are sometimes out, and during storms and breakdowns the police patrol box must be depended on for communications. Major Ernest W. Brown, Superintendent of Police, Washington, D. C., furnishes the following information:

"Figures for fiscal year to June 30, 1934: 62,184 messages were transmitted over the radio to the Washington police. Of these, 41,238 were given to radio cars, and 77 per cent were answered within 2 minutes, and 94.6 per cent within 3 minutes. The other 20,946 calls were miscellaneous calls for other departments, as stolen automobiles.

"While it is proved that the radio for the police department has increased efficiency, it does not replace the value of the patrol signal box system in police service, as each serves a distinct and important function. Radio enables cars to be in constant communication with headquarters; the patrol signal system enables patrolmen as well as officers assigned to radio cars to communicate with the precinct stations, bureaus and headquarters for secret messages and for reporting back to the precincts and headquarters. With increase in population in the built-up areas of Washington, the patrol signal system is being extended."

New York City Practice

In large cities where radio work is separate and distinct from the work of foot patrolmen there will always be need for the signal box as a means of communication between the patrol officer and his supervising sergeant at the switchboard at the local precinct. Each precinct is divided into several sectors. In each sector there is a radio car which remains in that sector except when a radio call sends it out of the sector for a few minutes.

The patrolman is needed in New York as much as he ever was, for patrolling the neighborhood and doing the multitude of things that are jobs for one man—trying doors, covering school crossings, sidewalk inspection, snow removal, street obstructions, football in the street, merchandise stands. The signal box is his means of communication. There are 1,629 of these boxes in New York; 480 in Manhattan; 544 in Brooklyn; 255 in the Bronx; 293 in Queens; 57 in Richmond.

The radio cooperates with both traffic officers and patrolmen in giving them information concerning wanted cars and trucks.

THOMAS W. ROCHESTER,
Chief Engineer, Police Department, New York City.

The Indispensable Patrolman

Quite contrary to the first reactions of the lay mind, foot patrolmen are needed just as much as ever after a city has equipped itself with radio cruiser cars. The radio is of principal value after the crime has struck. The street box and recall system has a similar value and is of greater value in the regular run of policing in a preventive sense.

Foot patrolmen make up the fine teeth in the police comb. It is the patrolman who tries the doors of business establishments, peers into the alleyways and doorways that officers in the radio cars miss, who lingers on the "tender" spots of his beat long enough to make friends and to ferret out the questionable characters, keeping them spotted so that they can be picked up at will. This type of officer can quickly locate the vice dens. And the law-respecting influence which the foot patrolman has on the minds of youths because of his friendly personal contact with them, is a valuable factor in crime prevention.

Police Commissioner E. C. Hultman of Boston emphasized the value of the foot patrolman on regular route

MOTORCYCLE OFFICER REPORTING THROUGH A GAMEWELL BOX

Box at Weymouth, Mass., of same type as used in outlying areas of larger cities, as Boston, Detroit, Cleveland. Some cities eliminated the police box when they installed radio; but cities that have both the box and the recall system, says Mr. Friede, should keep them in service along with the radio, for if a foot patrolman is in conversation with his precinct and hangs up his receiver, and the precinct wishes to get him back on the line, the recall system is very desirable—without it, is like a home telephone without its bell box.

There are cases in regular police work where it is desirable to reach the foot patrolman to investigate some condition which can be better handled by him because of his familiarity with the beat and the citizens than by the crew of a radio car. Boston mobilizes and controls its officers in the street in less than seven minutes by a system of lights which can be thrown from the station house. "It is important," said Commissioner E. C. Hultman, of Boston, "in a police signal system that the administrative feature of controlling your men and knowing that they are attending to duty should be feasible by the signal system rather than by a large number of superior officers who are continually watching them."

work when at the dedication of Boston's new radio system last summer, he said:

"The new radio station has practically revolutionized the method of police procedure in Boston. Starting last night, route men had as their objective the guarding of property and citizens on their various routes. All emergency calls and trips, in the past very often done by route officers, will now be cared for by radio cars. The radio cars will not only rush to any point of their division, but will also be used in the case of an emergency in any part of the city."

The Essential Signaling System

The foot patrolman is still an important factor in police work. Where there are patrolmen there is still great need for a street signal box and recall system. Recently the engineers of the Massachusetts Institute of Technology made a survey for the city of Boston, and following a tour of a number of larger cities of the country they recommended the complete revamping of the existing street box and recall signaling system, stating that this system is the backbone of modern police signaling, and improvements in it should be made at once in conjunction with the installation of radio.

To summarize, the street box and recall system furnishes the foot patrolman, the plain-clothes man and the mounted officer with their only means of telephone communication with headquarters at all hours of the day and night. The insertion of a key is all that is needed to secure emergency assistance. It permits headquarters to communicate with foot patrolmen and mounted officers while they are on their beats. It provides a means of checking the routine of these men, through the on-duty report calls which are automatically recorded at the police stations. Such records protect patrolmen from any unjust criticism on the part of misinformed citizens who feel that their localities are not properly patrolled. In addition to these functions, the box and recall system has the following relationship to the radio-equipped cruiser cars:

1. It provides cruiser cars equipped with radio, a means of secret two-way communications. Radio instructors can send any of these cruiser cars to the nearest signal box for special instructions. Any of these officers, afoot or in cars, can thus report special information to headquarters.

2. It provides headquarters with a definite checking on the rounds made by each radio-equipped car by making it compulsory for each car to pull boxes at regular periods.

3. It provides the element of secrecy for messages of an unusual nature that cannot be placed on the air in standard routine police code.

4. The radio regulations regarding unnecessary messages are very strict, for such messages tend to congest the already crowded police wave band. An operator or a station may forfeit license by this practice. To avoid it, radio car crews as a matter of routine should secure routine orders at street signal boxes.

5. In its bulletin on police radio, the Federal Radio Commission states definitely that it is not the intention that radio equipment shall replace existing signal systems, but supplement them.

6. Serious consequences have arisen from the radio transmission of names of prominent citizens and calls directing cars to their homes. For this reason, police operators should be careful in handling such messages, and instead of giving the information over the air they should direct the radio car to the nearest police box for private instructions.

7. At present there is no such thing as secret conversation on the police radio. Some concerns have offered ultra-frequency to provide secrecy; but as a matter of fact every radio magazine and many books give full details for building ultra-frequency receivers. This is the simplest kind of set for amateurs to build. (A bank official recently called police headquarters asking for a special guard to protect the movement of a large amount of cash. The radio man placed this message on the air: "Go to ..... Bank and stand by at 10:30. They are going to move a lot of money." Such information might easily have been a tip-off for any crooks listening in. A trained and alert operator would have called a cruiser and directed its crew to report to headquarters through the nearest signal box.)

8. The street box and recall system provides the police department with an old reliable standby in the event of an accident that temporarily cripples the radio alarm system.

An example of intelligent use of the street signal system was given by a bulletin issued in August by the New York Police Department: *All squad and detective cars in the five boroughs of the city are ordered to communicate with their precincts and district officials by police telephone* (for secret orders in connection with the recent $427,000 armored-truck hold-up in Brooklyn.)

This order was issued because the police felt certain the cars used by the robbers contained short-wave receiving sets and were avoiding police cars.

Stabilizing Gravel Roads in Northwest Michigan

By WALTER O. DOW

County Engineer, Grand Traverse County, Traverse City, Mich.

GRAND TRAVERSE COUNTY is located in the northwestern corner of Michigan, in the center of the summer resort region. Because of this fact, our roads, in summer, carry from two to three times the normal traffic. The people involved in this summer traffic expect and demand a smooth, dustless road surface.

It has taxed our resources to the limit to maintain such a standard on gravel roads under summer traffic conditions. The county now maintains approximately 350 miles of this type. Because of the sandy nature of the material which is locally available, these roads have been covered usually with loose gravel, and have required blading several times a week during the summer months in order to give even reasonable service to the traveling public. Such frequent maintenance has been expensive, yet replacement by a hard-surface type has been out of the question because of the large investment of funds necessary.

TABLE 1—COMMON SOIL CONSTITUENTS OF TRAFFIC-BOUND ROADS

Material	Particle Size Diam. Inches	Limiting Sieve Sizes*	Properties and Functions
Gravel or coarse material	Over .08	On No. 10	Supply internal friction to stable mixtures
Coarse sand	.08 to .0165	Nos. 10-40	Alone, they have: High internal friction Little or no capillarity No cohesion No compressibility or elasticity (hence are non-expansive)
Fine sand	.0165 to .002	Nos. 40-270	
Silt	.002 to .0002		Supplies internal friction to stable mixtures Alone, it has: Some internal friction Rapid capillarity (detrimental) No cohesion Compressibility (hence is expansive)
Clay	Under .0002		Supplies cohesion to stable mixtures Alone, it has: No internal friction Slow capillarity High cohesion Compressibility (hence is expansive)

*U. S. Standard Sieve Series.

Gravel Stabilization Projects in Grand Traverse County

Garfield Road.—This road is two miles south of the city limits of Traverse City and was the first stabilization project undertaken. The work was begun about the middle of October, 1932, and carried over into early November. Clay was delivered onto the road at the rate of 156 cubic yards per mile. This was sufficient for a 20-foot width of road scarified to a depth of 3 inches.

A great deal of wet weather was encountered during the work on this project. When the south mile had been partly scarified, a very heavy rain commenced. The scarifying was completed, however, and the mixing was done during the rain. Naturally, the road became quite muddy.

TABLE 2—STABILIZATION COSTS PER MILE OF GRAVEL ROAD GRAND TRAVERSE COUNTY, MICHIGAN

	Garfield 2 mi.	County Line 3 mi.	Acme-Kalkaska 8.65 mi.	Silver Lake 5.5 mi.	Secore 2 mi.	Average
Clay, in pit (10c per cu. yd.)	15.60	9.00	18.80	26.00	28.60	22.25*
Loading clay	46.85	12.55	22.40	36.25	34.44	34.98*
Hauling clay	98.40	20.73	57.60	65.70	37.90	69.90*
Spreading clay	12.15	8.15	10.10	16.50	9.73	12.12*
Pulverizing clay	11.10	10.76	7.82	12.20	10.50	10.48
Scarifying, mixing and shaping	62.52	33.86	24.00	53.10	41.06	42.91
Stone removal	.....	.....	.....	8.60	36.45	.....
Sprinkling	.....	.....	.....	33.00	34.10	33.55
Calcium chloride (applied)	.....	58.51	46.30	44.20	48.75	49.44
	246.62	153.56	187.02	295.55	301.53	275.63†

*Costs from County Line project omitted because thickness of stabilized course was only 1.5 inches; other projects were 3 inches.

†Average, exclusive of cost of removal of stone. Width of stabilized wearing course was 20 feet on all projects.

The next morning, after the rain had stopped, the road was further mixed with a spring-tooth harrow and truck blade. After about two hours, the road became so firm that work with the harrow was discontinued. The final shaping was done with the truck blade, aided by the compaction which was furnished by traffic. Before any calcium chloride could be applied, another hard rain occurred, but it had very little effect on the finished road.

On the north mile, a great deal of difficulty was encountered in drying the clay, owing to several rains and snowstorms. After several attempts, however, the clay was finally dried and pulverized and the road was scarified, and the materials were thoroughly dry and wet-mixed. In fact, because of so much rain, it was necessary to remove the wet mixture to the shoulders and make no attempt to do any more with it for several days. Finally, most of the mixture was dried out and put down in place, although a small part of it had to remain on the shoulders until spring.

In the fall of the year, there was some adverse criticism of the work because of the muddiness. In the spring this two-mile stretch was the best piece of gravel road in the county. Late October and November is too late in the season for this type of work in our section of the country. It would be safe to say that the work could have been accomplished for about $200 per mile earlier in the season, when costly delays due to cold wet weather would not have occurred. No calcium chloride was applied to the road until the next spring. Until winter set in, the surface was so continuously damp that the calcium chloride treatment was not warranted.

County Line Road No. 612.—This three-mile project is a road for which plans had already been made to provide a tar-bound macadam surface. Owing to curtailment of expenses, however, it was decided to postpone the laying of the more expensive surface and to stabilize the existing gravel for a width of 20 feet and a depth of only 1½ inches. Laboratory tests indicated that this would require 90 cubic yards of clay per mile.

This project was begun June 24, 1933, and was finished five days later. After the dry mixing and shaping operations were completed, the dust nuisance was so great that the calcium chloride was applied at the rate of 2½ tons per mile. The application was made in the afternoon and it reduced the dust nuisance. During the night, a heavy rain fell, but in the morning the road was damp and well compacted, except in a few spots where the crown was somewhat low. In these places the road was wetter and rougher. Subsequent blading put the road in good condition.

Acme-Kalkaska Road.—This project, comprising 8.65 miles of gravel road, was started July 5, 1933, and completed on July 27. Extremely hot, dry weather prevailed during the entire time. Clay was used from two pits, one near to each end of the job. In one case, it required 247 cubic yards of clay per mile of road to provide the desired cohesive properties to the finished road mixture, while in the other case it required only 186 cubic yards of clay per mile of road. The deposit of the better quality clay was not as close to most of the project as the clay having the poorer binding properties. The cost of hauling, considering the quality and hence the amount of clay needed, was computed for each pit. These calculations showed the proper point on the road to change from one pit to the other.

This job offered a good example of the need for moisture in the wearing course during the shaping and compacting processes. The finished mixture of clay, sand, and gravel was very dry and loose. The road was shaped in this condition and calcium chloride was applied to relieve the dust nuisance. Various sections of the project became rough in spots, however, until after they had been subjected to rainfall. This was particularly true of the first mile over which clay for the rest of the section was hauled. A loose, shifting, layer of sand-clay-gravel mixture existed under the surface layer after the latter was made damp with calcium chloride. Under such conditions, the traffic broke through the upper layer in many places and made ruts and rough spots. Following the first rain these loose areas became compacted and were smoothed with a truck blade.

Silver Lake Road.—Previous to stabilization, this road was covered with considerable loose gravel and was always hard to keep even reasonably smooth. Five and one-half miles of it were stabilized between July 28 and September 5, 1933. The quantity of clay used on this job was 260 cubic yards per mile.

The operations on this project were the same as on the other jobs until, on the last section, a sprinkling wagon was used to dampen the mixed materials as they were shaped and compacted. The earlier sections of this road required one rainfall before they could be put in perfect condition, but by the time the last section was completed, the whole road was in satisfactory shape and remained so with very little maintenance until the wet fall weather.

The mixing and scarifying costs on this job were somewhat high, because the work was done under summer traffic conditions and in order to hasten its completion three mixing units were employed. The cost of loading and hauling the clay was also abnormally high on this project because of the difficulty of access to the clay pit.

Secore Road.—This project consisted of two miles of loose gravel road which had always been pitted badly during the summer months. It was stabilized between the 5th and 12th of September. The clay required by this job was 286 cubic yards per mile, 20 feet wide.

Maintenance

The amount, and hence the cost, of maintenance for stabilized gravel roads is much less than for the ordinary type. It is very important, however, that stabilized gravel be maintained at the proper time. Skill and experience in these operations are also very necessary.

Ordinary maintenance consists of patching, blading, and light applications of calcium chloride. After long intervals of dry weather, pit-holes are liable to develop, particularly if the calcium chloride treatment has been delayed too long. These are patched with a mixture of clay, gravel, and calcium chloride, as nearly like the original preparation as possible. Gravel passing a ½-inch screen is preferred for this purpose. The pit-hole is wet from an ordinary sprinkling can, the mixture is tamped into the hole with a shovel and leveled with the surrounding surface, and then a light layer of calcium chloride is sprinkled over the patch.

Blading can be done only after a rain, because in dry weather a blade will not cut the surface. Truck blades and motor graders are used for this purpose. Experience will teach the operator just the proper time after a rain to begin blading. Working too early will result in tearing the surface, while if the shaping is started too late, the surface will begin to harden and cannot be cut.

During the first season, slippery spots may develop after a hard rain, because it is difficult to maintain laboratory proportions of clay, sand, and gravel in the field. A light cost of pea gravel or coarse sand sprinkled over the places will correct this condition.

Conclusion

The economy effected by stabilized gravel roads lies chiefly in two directions: first, the scraping maintenance is less; and, second, the loss of materials from the road, and hence the quantity of replacement gravel, is reduced considerably.

Another advantage of stabilization is the increased benefit obtained from the use of calcium chloride on surfaces of this type. By using three or four light treatments ranging from one to two tons per mile each, continuous dustlessness can be secured throughout the season at a low cost.

The low original cost of the stabilized gravel road must also be taken into consideration. This makes it possible, with a limited budget for new work, to give more miles of firm, dustless, and completely satisfactory surfaces to automobile owners of our county than we could hope to do by building the more costly pavement type of roads.

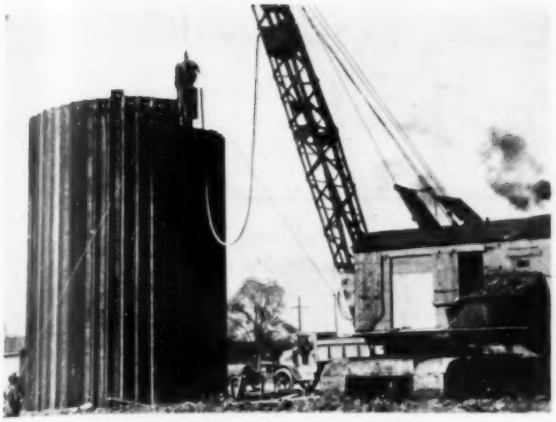
ACKNOWLEDGMENT.—From a paper presented at the Twentieth Annual Purdue Road School.

Major in Municipal Finance and Administration

ANNOUNCEMENT is made by Chester Lloyd Jones, Director of the School of Commerce of the University of Wisconsin, of the establishment of a new major in Municipal Finance and Administration leading to the bachelor's degree. The purpose of the training offered is to give the student special training in lines essential (1) to those who intend entering public service in the financial activities and the executive work of our cities and other units of local government and (2) to those whose work in public utilities and other lines involving municipal activities demands familiarity with the organization and functioning of these divisions.

The earlier years of the course are spent in work in general foundation subjects supplemented by courses in government, general economics, money and banking, statistics, public utilities and elementary accounting. The later years offer opportunities for greater specialization in administration, taxation, finance, accounting and the law of municipal corporations.

Courses of the sort above outlined should contribute in no small degree to meet the need for better-trained public servants.



DRIVING THE STEEL SHEET PILING CAISSON

THE STEEL SHELL COMPLETED AND THE CENTER EXCAVATED

A Pumping Station Built Without an Appropriation

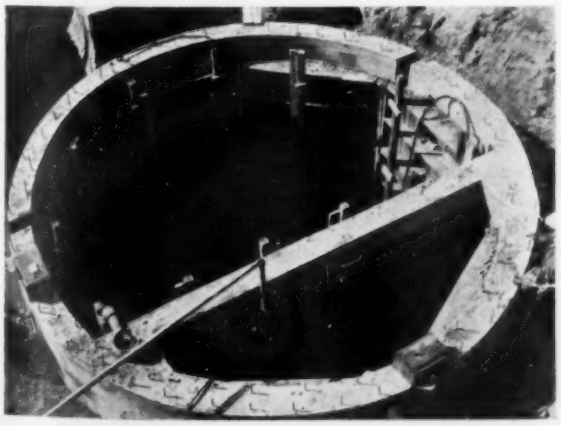
By **JOSEPH S. STRINGHAM**
City Engineer, Detroit, Mich.

THIS was made possible by three different conditions: First, the city of Detroit owned the pumps from a previous job and had them in storage. Second, a refund payment of $10,000 by the city of Dearborn to the city of Detroit was made on a loan of $100,000. By changing the location of the new pumping station to a point on Ford Road about 1,500 feet nearer to the city of Dearborn, it was not necessary to build this section of new sewer Third, the Detroit Edison Co. refunded to the city of Detroit the sum of $12,000, which the city properly believed was an overcharge for current used at the old Kirkwood pumping station. The rate originally fixed was based on a rate for temporary service, which actually lasted about 4½ years.

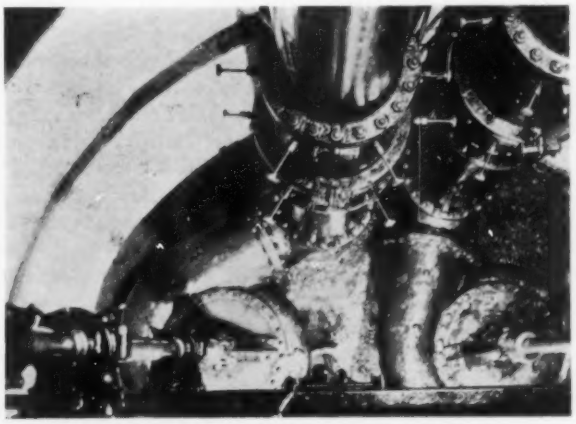
The photographs show the process of constructing the pumping station by driving 40-foot steel piling, building a concrete cylinder inside of it, setting the pumps and motors and completing the building.

The function of the station is to take the dry-weather flow from the Southfield sewer, 10 feet in diameter, lift it 18 feet and discharge it into the city of Dearborn sewer, which is 4 feet in diameter. The sewage then passes to the treatment plant at Dearborn, having been metered at the pump discharge, and treatment is paid for by the city of Detroit, at the rate of $13.80 per million gallons. The pumps used have a capacity of 15,000 gpm, each, and are driven by 100-hp electric motors. All dry-weather flow in the 10-foot combined sewer is diverted to the pumping station by a low dam in the bottom of the sewer, which functions as a weir for storm water.

The purpose of the station is to prevent the discharge of raw sanitary sewage into the Rouge River. The area drained is about 35 square miles, which is 25 per cent of the total drainage area of the city of Detroit. The station operates twenty-four hours a day, and the sewage treatment contract between the two cities is for ten years.



THE CONCRETE CYLINDER COMPLETED AND THE STEEL SHEET PILING WITHDRAWN



THE PUMP INSTALLATION AT THE BOTTOM OF THE PIT

Municipal Improvements Visualized by Art Department Pupils of Paterson Schools

By ETHELYN HENDERSON

Supervisor of Fine and Industrial Arts, Public Schools, Paterson, N. J.

THE problem of city and garden planning as carried out in the Art Department of the Paterson Public Schools has a twofold significance—the esthetic and the social. As an art project it is a problem in design just as much as is costume design, textile design or interior decoration, sculpture, or painting, "design" as we use the term meaning "plan." The balance of lines, masses, colors, textures is just as important as in the before-mentioned projects; in fact, more so. We don't have to buy pictures, costumes, textiles unless we like them, but for better or worse we have to live in the cities of our choice.

It has become a truism in this streamline age that you cannot separate beauty and function. The social implication is obvious. A city to be truly beautiful must function properly. We have heard a great deal lately about the right of every individual to at least a minimum in proper housing, just as he has a right to a minimum in education. When we begin from this standpoint, we find that we have at least a minimum of beauty.

The Purpose of This Method of Teaching Art

The avowed aim of teaching art is to develop good citizens, through training in appreciations, skills, and expressions. From the standpoint of appreciation, there certainly are many areas in our city which might be improved in appearance, and since mere appearance is unimportant if function is violated, it follows that many areas need reorganization from the standpoint of safety, sanitation, and convenience, as well as beauty. There is no doubt that opportunities for expression and development of skill are present.

In introducing this subject in the schools the question was: "Would the children be interested?" The Supervisor presented the subject to the Special Art teachers, suggesting that they approach the subject from the standpoint of the children's interest in the various sections. The result was that in some districts it was possible to interest the children in their own back yards or in playgrounds for their own schools, while other children had reached the state of social consciousness where they were interested in their neighborhoods, and still others in the city as a whole.

The exhibition shown at the Woman's Club, and later by special request in connection with a Housing Conference sponsored by the Mayor's Committee, the Advisory Board of the Passaic County ERA, and the Art Department, illustrates an experiment. It was an attempt to see how much the children could grasp along these lines.

Other Cities Please Copy

At an enthusiastic Housing and Planning Conference held on October 17, a remarkable exhibit was shown of work by the Art Department pupils of the Paterson public schools. Believing that this project may offer practical suggestions for city planners and educators in other cities who are desirous of arousing an active and intelligent interest among school children in the future welfare of their communities, The American City has asked the prime mover in this interesting undertaking to tell the story for the benefit of our readers.

Perhaps the best way to give an idea of the social values implicit in this work would be a brief résumé of the work carried on in the various schools as reported by the art teachers.

REPLANNING THE NEIGHBORHOOD WITHOUT INTERFERING WITH ZONING

The Eighth Grade in School No. 13, under the direction of Miss Ethel Davis, studied the immediate neighborhood of their school. The majority voted the surroundings of the Susquehanna Railroad station were most unsightly, not only for residents but for travelers through the city. Maps of the district as it is now were made to scale. The pupils studied possibilities for changing the neighborhood, made studies of zoning laws, and also of improvements which have recently been made in other parts of the city, particularly around the Erie Station and the new Post Office. Maps were then drawn showing changes which might be made without interfering with the present zoning laws. These were followed by models in plasteline, some made by groups working together, and others by individual pupils.

RECREATIONAL FEATURES

In School No. 20, Mrs. O'Brien teacher, the Seventh Grade (boys) deciding that the property bordering the Passaic River, between Eastside Park and Twentieth Avenue, now used as a dump, was a great detriment to their neighborhood, made plans for developing this into a boulevard.

They began by making a trip to the place, and then prepared a map showing the lay of the land. After a discussion of what was needed, they made specific studies of airplane views of well-planned cities, and pictures of roadways and beautiful, well-planned boulevards, and also plans for water and land recreation. Plans were then drawn by each pupil showing roadway and river as a pattern. Footpaths, bridlepaths, roadway, fountain, monument, were all used as elements in design. The best plan was selected by the class and criticized. Groups were then formed to make the various elements. The final model shows facilities for boating and bathing, including boat club with roof garden, pavilion, and locker rooms; sandy beaches, parking facilities, pedestrian passage underneath boulevard, four-lane highways, bridlepaths, walks, benches, fountains, flagpole and a row of tall trees in the background to hide back yards of houses in the rear.

HOUSING DEVELOPMENTS

In the same school, but in the Eighth Grade, a housing project was undertaken. Undeveloped land north of Broadway

facing the boulevard was the part selected. The idea of the class was to develop a plan for a model district for the motor age. They began with a bicycle trip to Radburn, the "Town for the Motor Age."

In the previous class these boys had designed and made models of individual homes and gardens. They now organized themselves into groups, some to lay out the general plan and others to make the individual houses. After discussion, they decided that these should be Colonial in style. Their final model shows attractive grouping of houses to permit the maximum amount of light and air, motor entrance in rear, pedestrian paths not crossing roadways, and a community park which is reached without crossing roads.

In School No. 25 under Miss Acton's direction, another interesting project was carried out. Since the district was still partially undeveloped, the children decided that there might still be an opportunity to have it well planned. In this way they became interested in city planning. They made studies to see how this work had been done in other places and studied their own district for possibilities.

Beginning with their own school, they found it was Georgian in style. Photographs of Georgian houses and churches were then studied for architecture and details which have been used in the school.

They then divided themselves into committees, one group for each street. Together they planned the number and arrangement of the houses. One group made a model of the school. Another made an enlargement of the whole district from the scale used on blueprints of the school. Each member made individual floor plans for houses and modeled houses from these plans. The whole was then assembled by a committee.

The Mayor of Paterson, examining these plans, stated that he had just given permission to develop the block facing the school into a business district. We are planning to take this as the next project for the pupils of this school. Careful thought will be given to parking facilities and to designing harmonious buildings.

In this school, garden planning was also studied by a group of 8A girls. Types of gardens and ways of planning them were discussed. Groups of two were formed who worked out a number of gardens. The necessity for neighborhood planning and cooperation were stressed in this.

STREET PLANNING—GARDENS—TRAFFIC SAFETY

In School No. 5, under direction of Miss Gladys Grundy, the approach was made from the scientific standpoint. The Passaic Falls offered an interesting point of departure. A study of the geology of this section was made, followed by a model of the falls and maps of the rock ridge near Ellison Street cut and of the geological sections under the school.

From this they proceeded to a map showing the Totowa section, with the present division of streets and arrangement of buildings. This was followed by designs for replanning the entire district. To this end they discussed the advantages of having a natural park around the Passaic Falls and along the stone ridge at Ellison Street, and the use of the river for swimming.

Individual plans for the site purchased by the city for the new School No. 5 were then made. The arrangement of houses in relation to the whole was carefully studied. Another project carried out in this school was that of a model for a "safe city." A study of planned towns such as Radburn was made. Still another class decided that they might begin to improve their own back yards. Models for formal gardens suited to small areas were made.

In School No. 6, under Miss McGlashan's direction, a number of interesting projects were carried out, including plans for parks, individual houses and plots. Models were made of these. A large map showing Paterson replanned was made. In order to do this, plans of garden cities here and abroad were studied and contrasted with Paterson.

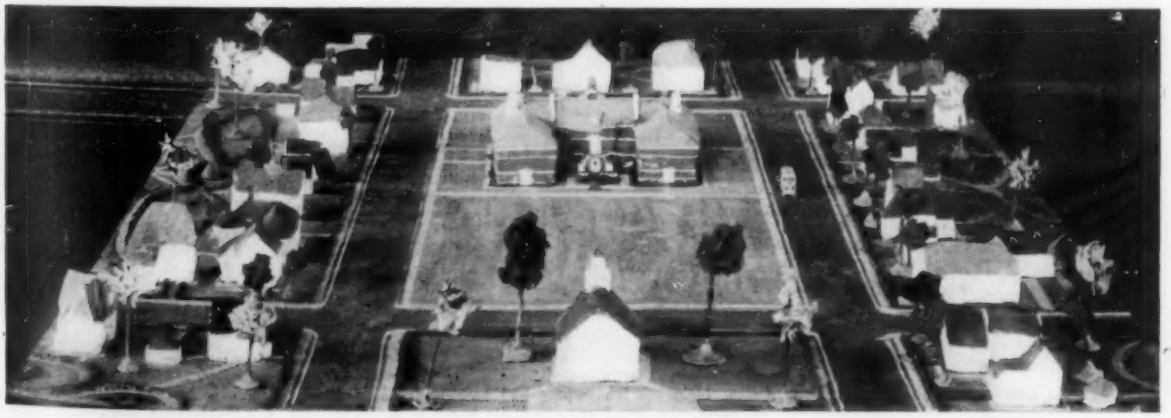
PLAYGROUNDS—BACK YARDS—NEIGHBORHOOD IMPROVEMENTS

School No. 12, Miss Kuyl teacher, made models for developing a vacant plot near the school, for playgrounds and individual gardens. These were actually carried out in many cases. This fall the school had a flower show consisting of bouquets and table arrangements composed of the flowers grown in these gardens. They also made miniature hothouses and window-boxes for winter flowers.

School No. 7, under Miss Sinkankas, made plans for their own school playground, which have been pronounced practicable by experts. The pupils of School No. 2, Miss Semar teacher, made models for reorganizing the neighborhood and for individual gardens.

In a Fifth Grade in School No. 10, under Miss Frazza's direction, each child made a drawing followed by a color sketch and then a model of his own back yard. This had been preceded by compositions in ink entitled "My Neighborhood as It Is." These gave details proving the necessity for reorganization. In the same school, under Miss White's direction, plans for parks and for individual home grounds were made.

Sixth Grade pupils in School No. 9, taught by Miss Ruvolo, after making detailed studies of their neighborhood to scale, reorganized different areas, by means of working drawings, colored sketches and models. They summarized what they had gained through the project in the following way: "We learn to take care of property, beautify neighborhoods, recog-



THE NEW GEORGIAN SCHOOL NO. 25, IN AN UNDEVELOPED SECTION OF PATERSON, HAS BEEN SURROUNDED, IN THIS MODEL BY THE PUPILS, WITH HOUSES DESIGNED TO HARMONIZE WITH THE ARCHITECTURE OF THE SCHOOL

The foreshortened photograph does not do justice to the excellent planning of the model

THE CHILDREN OF SCHOOL NO. 20 IN PATERSON MODELED THIS DEVELOPMENT OF A DUMP ALONG THE PASSAIC RIVER INTO A BOULEVARD AND A LAND AND WATER RECREATION PLACE

nize our great natural resources and learn the spirit of co-operating with our neighbors."

PUBLIC BUILDINGS AND THEIR SURROUNDINGS

The Central High School, Miss Botts teacher, worked out the following projects: improvements in school surroundings; plans for a new city hall; plans for a new gymnasium on site of old Post Office.

In the Eastside High School, Miss Humphreys teacher, individual gardens and plans for plazas to be developed in parts of the city now congested and dangerous were made. Emphasis was placed upon direct appeal of sensation of beauty on nervous system; benefit to health of outdoor activities; beauty of environment an economic asset rather than debit. The objectives of the work were as follows: conservation of natural beauty; improvement in quality of man-made beauty; and realization of beauty achieved by fine spacing, mass and color. Posters encouraging growth and preservation of flowers and trees were also designed.

Under Miss Smith's direction, three-dimensional lead-pencil sketches of gardens were made.

As a result of the second showing of the exhibit in connection with the housing conference, many requests have come to have it exhibited in other places. Mr. Loede, of the Passaic County Park Commission, has asked to have it shown at the headquarters of the Commission. Columbia University and the New Jersey State Normal School at Newark are among others requesting it.

Looking ahead, we find that our previous work has created a demand for cooperation in different directions. One important request has come from the Garden Division of the Woman's Club. They have secured permission from the city to develop the plot of ground adjoining the Free Public Library as a park. The pupils in the schools have been asked to design the models for this development. The actual planting will be carried out by students who are members of the Junior Garden Club, under the supervision of state authorities.

The Municipal Group at Clayton, Missouri

This view shows what tasteful design, including landscaping and horticulture as well as brick, can do with what frequently is an ugly utilitarian building—the fire house. This fire house is at Clayton, Mo., a self-governing suburb of St. Louis, with a population of 10,000. Behind it looms the City Hall, which is shown floodlighted on the cover of this issue. The effect shown on the cover is obtained by Crouse-Hinds floodlights, and General Electric luminaires in front of the building

Thawing New York State Water Mains

By C. A. HOLMQUIST and A. F. DAPPERT

**Director and Principal Sanitary Engineer, respectively,
Division of Sanitation,
New York State Department of Health**

THE very severe winter of 1933-1934 saw an unusual number of frozen water pipes throughout New York State. Water-works officials were called upon to work many extra hours, in some cases frantically, responding to the emergencies thus created. Steps were taken by the State Department of Health to record the experience of these municipalities and make it available to all. Questionnaires were sent to most water-works officials in the state, and the replies were studied. The following discussion summarizes the data obtained and gives some of the more interesting highlights of the various experiences reported.

Cold-Weather Conditions

January, February and March, 1934, were unusually cold months. The average of the mean monthly temperatures for these three months ranged from 12.4° F. in the St. Lawrence Valley and Adirondack sections to 27.9° F. in the Atlantic Coastal section. Many sections were repeatedly visited by prolonged periods of cold temperatures, in some instances reaching 40 to 50 degrees below zero. The lack of snow in some sections aggravated conditions. In many localities the ground became frozen to depths of 5 feet or more.

Extent of Damage Due to Freezing

It is not possible to estimate accurately the amount of damage caused by the widespread freeze-ups throughout the state, but it is safe to say that it amounted to many thousands of dollars. In a few instances entire supplies became frozen and residents were without service for many days. In several instances expensive temporary lines had to be laid. Some of the very small municipalities reported actual damages in excess of $5,000. The repairs to broken mains and hydrants and house services in many cases amounted to considerable sums.

Replies were received from 306 municipalities, 147 of which reported frozen mains, 117 broken mains, 93 frozen hydrants, 63 broken hydrants, 251 frozen service pipes, and 184 broken service pipes. Service pipes, as would naturally be expected, gave the most trouble, although in many municipalities there were numerous breaks in mains. Buffalo alone reported 50 broken mains. One hundred eighty-one municipalities reported a total of nearly 10,000 frozen services.

Relation of Depth of Cover to Freezing of Water Pipes

Trouble was quite generally experienced, regardless of the depth of cover. However, in several instances where deep depths of cover were reported for mains or services, notation was made on the questionnaire that the freeze-up occurred in a section where some time subsequent to the laying of the pipe the street grade had been cut down, thus reducing the depth of cover. Generally speaking, many services were frozen even though the depth of cover was as much as 5 feet, and in some cases 6 feet. This is not surprising when it is recalled that in many sections of the state at that time the frost line was reported to be from 5½ to 6 feet deep, or more.

The following tabulation shows in a general way the relation of depth of cover to the freezing of water pipes.

Depth of Cover in Feet	Number of Systems with Mains at Depths Indicated	Number of Systems with Frozen Mains	Number of Systems with Services Laid at Depths Indicated	Number of Systems with Frozen Service Pipes
Less than 3	2	2	4	4
3 to 4	37	21	47	44
4 to 5	159	73	159	137
5 to 6	102	47	90	62
6 to 7	5	3	3	3
More than 7	1	1	1	1

Increased Use of Water During Severe Cold Weather

The period during which difficulties were experienced with frozen water pipes varied considerably from about two weeks to two and one-half months. The average period of difficulty as calculated from the replies was about one month. During this period water consumption in most municipalities was considerably in excess of the normal, being doubled in several instances. A few municipalities, however, reported decreased water consumption during the period. In a good many communities, residents were instructed to let faucets run, and hose connections were made to dead-ends to prevent freezing. This practice, which was somewhat general, together with the leaks which developed, would account largely for the great increase in water consumption generally reported.

Methods Employed in Thawing Pipes

The electrical method of thawing was the most popular and generally the most satisfactory, especially on frozen services. Many municipalities found it necessary to resort to wood, coke or charcoal fires, or the use of steam for thawing mains. The use of salt and blow-torches and steam on hydrants was frequently reported.

In 67 per cent of the municipalities reporting, the electrical method was used exclusively. The majority of these relied upon the service furnished by local power companies, although a good many purchased their own equipment. In a few cases the necessary apparatus was constructed and assembled locally. Forty-six municipalities reported the purchase of new commercial type equipment, most of which was of the electrical type.

In 23 per cent of the municipalities reporting, various combinations of thawing methods were used. For the most part, in these municipalities electrical equipment was used on services, sometimes in conjunction with hot water or steam, and steam, hot water, blow-torches or wood fires were used on frozen mains.

Five per cent of those reporting used steam, four per

cent fires and torches, and one per cent hot water exclusively.

Cost of Thawing

More than $125,000 was spent in the aggregate for thawing, exclusive of the purchase of new equipment in the municipalities which reported. The costs for equipment varied greatly, ranging from a steam apparatus costing $35 used in one Long Island village, to $1,225 for a high-capacity electrical thawing outfit used in one of the northern villages. Several municipalities used moderate capacity electrical outfits costing about $500. The majority of the electrical outfits purchased by municipalities during the winter, however, ranged between $150 and $250 in cost. Where thawing service was procured through local power companies, it is believed, rather high-capacity outfits were employed.

In 48 per cent of the municipalities reporting, the property owners paid for the cost of thawing water service pipes; in 27 per cent the cost was borne jointly by the municipality and property owner; and in 25 per cent the municipalities thawed services without charge to the property owner.

Where equipment was rented, the charges varied from $2.50 to $15 per hour. Where a set price per service was established, $5.00 was a frequent charge, although in many instances charges of $10.00 or more were made. The costs for thawing services averaged $8.50, but varied from $2.00 to $50.00. Generally, the cost of thawing by steam, hot water or wood fires was reported to be greater than by electricity, particularly on house services.

Difficulties Experienced in Thawing by Electricity

The reports from various municipalities indicate that electrical thawing has been generally satisfactory. The replies from 143 municipalities, in the majority of which thawing service was provided by local power companies, indicate full satisfaction with electrical thawing, except perhaps with respect to the variable rates charged by the power companies for this service. Municipalities that purchased commercial equipment report, in general, that satisfactory results were obtained.

Although a number of municipalities reported difficulty in thawing pipes with Leadite or Hydro-Tite joints, it is believed that this was due to the use of rather low-capacity thawing outfits, since there were several municipalities with medium- and large-capacity outfits which reported no difficulty in thawing pipes with such joints. Generally speaking, when thawing was done by outfits supplied by power companies, which presumably were of adequate capacity, little difficulty was reported. Where such joints are bonded, no difficulties are encountered in securing a flow of current.

The development of some tastes following the thawing of both copper services and pipes using joint compounds was rather generally reported, but it is felt that this experience is of no great significance, since most of the tastes could be eliminated in a few hours by thorough flushing.

In one instance it was reported that electric thawing burned out all hydrant packings. In another instance the superintendent attributed leaky hydrants following electrical thawing to the use of the hydrant as a terminal.

In a good many cases leaks or breaks are reported to have occurred either during or immediately following the thawing process. Several instances were reported where rusty water with a musty taste developed after thawing, which was attributed to the removal of tubercles.

Some municipalities reported that lead joints were affected and in some cases melted. One municipality reported that in every instance following electrical thawing of service pipes a break developed about the middle of the pipe. One municipality reported that generally breaks occurred in the goosenecks between the mains and services. Another reported that in nine out of ten instances where services were thawed electrically breaks occurred in the lead goosenecks, leaving holes the size of a silver dollar.

Considerable difficulty was also reported in the electrical thawing of copper service pipes due to high conductivity and heat losses through the copper pipe into the surrounding soil. Generally the thawing of copper service required a longer time than galvanized iron, or required increased current. One municipality reported that it was necessary to develop 1,500 amperes to thaw out some pipes.

In one municipality the practice of attaching a piece of copper tubing to the corporation stop on the main and carrying it to the surface as a future electrical connection was followed in all cases where it was necessary to dig during the past winter to make such connections. This practice was recommended by another municipality as a future policy in case of all new services and replacements.

Summary

The reports from the various municipalities would indicate that electrical thawing methods proved generally satisfactory. The replies in the aggregate comprise a good testimonial to the successful use of electric thawing equipment. The evidence appears quite plain, however, that copper service pipes are difficult to thaw and that where Leadite or Hydro-Tite joints are in use, electrical thawing may not be attended with success unless adequate capacity outfits are employed.

In many municipalities where excellent results were obtained in the electrical thawing of service pipes, steam or wood fires were used for the thawing of frozen mains. This would suggest that in many instances the electric thawing outfits were of too small capacity to work effectively on larger-size pipe.

The logical conclusion is that electrical thawing outfits will operate with degrees of success about in proportion to their capacities. The very small capacity outfits will apparently work satisfactorily on small lengths of iron service piping but are generally unsatisfactory for use on copper services. Medium-capacity outfits will operate successfully on larger lengths of pipe, including short lengths of small-size mains and generally on copper services. High-capacity units generally will work satisfactorily on mains of considerable lengths, on copper services and on pipes jointed with Leadite.

Because fewer difficulties were reported from municipalities which procured thawing service from local power companies, it is considered that best results will be obtained when electrical thawing is under the supervision of a competent electrician. The work requires at least supervision by some one who is familiar with the making of electrical connections and who understands thoroughly the principles involved and can arrange hook-ups that will avoid current losses.

Low-Cost Road Surfacing in Georgia

Sand-Clay Base with Asphalt and Slag Top

By **F. M. GARNETT**

Division Office Engineer,
State Highway Department of Georgia,
Fitzgerald, Ga.

THE Georgia State Highway Department completed the grading and bridge construction of the Doctortown Crossing of the Altamaha River on State Route No. 38 between Jesup and Ludowici in April, 1931. This work included nine bridges totaling in length 5,714 feet, and heavy grading through 7 miles of river swamp. The total length of the project from Jesup to Ludowici is 11 miles.

Owing to the sandy nature of the fill material the graded road was impassable. Limited funds and subsidence across the river swamp dictated the selection of local sand-clay as the first stage material for surfacing. At a cost of less than $1,700 per mile, a contract was let for the sand-clay surfacing of this project, and the surfacing was completed in July, 1931. Having in mind the future surface treatment of this sand-clay, especial care was used in the selection of the material, and all surfacing was hauled from two pits from which Class "A" sand-clay was secured.

This surfacing held up well under light traffic, but with improvement of the highways leading to the river crossing and the consequent traffic increase, it was considered advisable to protect the clay base with an all-weather surface. Shortage of funds and the demand for completing the surfacing before the winter rains set in caused the selection of a light surface treatment top. Work was begun August, 1932, using state forces.

Beginning at Ludowici, the north end of the project, a light surface treatment was laid on the 9 miles of sand-clay base. On the south end of the project, part of which is within the city limits of Jesup and under heavy traffic, it was decided to place an experimental section of tar road mix on 6,500 feet of the road.

Preparation of the Base

On the 9-mile section of sand-clay base to be surface-treated, borings were made at 50-foot intervals and the thickness of sand-clay was brought to a minimum of 6 inches. This required an average of 750 cubic yards of sand-clay per mile. The original sand-clay surface was first thoroughly scarified and the additional sand-clay then placed. The thickened base was again scarified and thoroughly harrowed to secure a uniform mix. It was then carefully machined, using a crown of ¼-inch to the foot. No attempt was made to set grade stakes except on the curves, where the superelevation was carefully worked out. The proper crown was held by use of a template. Long waves in the running surface were checked by a cord. After the thickened base was scarified and roughly shaped, it was rolled with an 8-ton roller and then bladed to exact section with a multiple blade maintainer and a 12-foot road machine.

A COMPLETED SECTION OF SAND-CLAY BASE WITH SLAG TOP

Base Compacted by Traffic

As no detours were available, all work was done under traffic. While this slowed up the operations somewhat, it was an advantage in compacting the base. It was found that under favorable conditions the base had sufficiently compacted so that the tar prime could be applied a week after the sand-clay had received its initial scarifying, harrowing and shaping. This was of course mainly due to the fact that the greater part of the base had been under traffic for approximately one year and had become thoroughly compacted before additional material was incorporated with the original base.

The Tar Prime

Before the tar prime was applied, the base was given a final machining or hard planing. At the time the base was hard bladed, it was again carefully checked for crown with a template. This hard blading was done with a 12-foot road machine and a Sixty tractor, and is considered one of the most important factors in securing a good riding surface. All minor irregularities, corrugations, etc., are worked out at this time. Tar prime with a specific viscosity of 25-35, Engler, was applied at a temperature of approximately 150 degrees, using 0.35- to 0.40-gallon per square yard. The tar prime was permitted to cure under traffic from ten to fourteen days. Traffic was worked over the entire road by placing obstructions down the center to develop the edges of the surface, and then by placing obstructions along the edges to develop the center.

Completing the Top with Asphalt and Slag

Asphalt with a penetration of 200-210 at a temperature of 350 to 375 degrees Fahrenheit was then applied at the rate of 0.35- to 0.40-gallon per square yard and covered with slag at the rate of 42 pounds per square yard.

STEPS IN PRODUCING AN ASPHALT-BOUND SLAG SURFACE ON A SAND-CLAY BASE
1. Sweeping the base just before the application of asphalt. 2. Applying asphalt with an 800-gallon Etnyre distributor. 3. Spreading slag on the asphalt. 4. Rolling the slag

The slag that was used was of the following grading:

Passing 1-inch screen	100 per cent
Passing ½-inch screen	Not more than 30 per cent
Retained on ¼-inch screen	100 per cent

The grading and quality of the slag is a very important factor in securing a lasting surface that will have a satisfactory appearance and be skidproof.

After the slag was placed, the surface was dragged with a broom drag and rolled with an 8-ton tandem roller. Later the excess slag that traffic whipped toward the edges was swept back in, toward the center.

Costs

The rapid rate at which this type of surface can be laid is an important advantage. The work was done by a state force crew, inexperienced in this type of construction, begun August 18, 1932, and completed November 25, 1932. The crew was also engaged during that period on the adjoining road-mix tar base and in grading at the underpass on the same project. The work was handicapped by the bad weather conditions usual in the late fall.

The cost of the work, including adding 750 cubic yards of sand-clay per mile, conditioning the base, placing the surface treatment, rebuilding shoulders and maintenance, was swept back in, toward the center.

Adding clay and conditioning base	$950	per mile
Tar prime	580	" "
Asphalt and slag treatment	1,300	" "
Shoulder construction and maintenance	170	" "
Total	$3,000	" "

Adding to this $3,000 per mile, the original cost of $1,700 per mile for the sand-clay surface, the total cost of the sand-clay base with surface treatment is $4,700 per mile.

—NOTE.—The second portion of this article will cover the tar road-mix section of the same highway, and will appear in the December issue of THE AMERICAN CITY.

Public Employee's Pledge

"I HAVE faith in my country and its institutions. I believe in the importance of my job and in the dignity of all public service. I count myself fortunate to live and work in a city where I may obtain public employment through competition fairly won and under a system which permits me to look forward to a career as a public employee and advancement through merit.

"I know that government is no better than the people who direct its affairs and do its work. I will be honest, loyal and industrious in the work I have to do. I will be courteous in my relations with my superiors, my fellow workers and the public. I will use public property entrusted to my care for the purposes intended and protect and conserve it as though it were my own.

"I will refrain from doing anything that will bring discredit upon the city as my employer or upon me as a civil servant. I will strive through my acts and my work to realize the purposes for which government is established and so merit the esteem and respect of the people."

—Adapted by the Buffalo Municipal Research Bureau from Charles P. Messick, in *Public Management*.

Modernizing the Political "Dark Continent" of County Government

By HOWARD P. JONES
Secretary, National Municipal League

IT is safe to say that during the past two years more progress, actual and potential, has been made in county government than in any equivalent period in our history. Virginia has led the way in years past, but it must share leadership honors now with California, where two counties have adopted the manager plan. Let me briefly summarize what has happened.

Four counties—San Mateo and Sacramento County, Calif., and Albemarle County and Henrico County, Va.—adopted the county manager plan, and 10 other counties in 8 states are considering it. Numerous other counties throughout the country are taking steps to reorganize their governmental set-up.

An optional county manager act was adopted in Nebraska, and constitutional amendments providing for county home rule were adopted in Ohio and Texas.

Omaha Votes November 6

Now a vigorous campaign is being waged for adoption of the manager plan in Douglas County, Nebr., which includes the city of Omaha. In Ohio eight urban counties will vote this November on the question of creating charter commissions to frame home rule charters under this recently adopted constitutional amendment. It is almost certain that a number of these will provide for a manager type of government.

Fourteen states—California, Connecticut, New Jersey, Illinois, North Carolina, Virginia, North Dakota, Minnesota, Michigan, Mississippi, New York, Ohio, Delaware and Texas—either have made or are making surveys of their local governments.

City-county consolidation measures, either local or statewide, were considered by the Legislatures of six states—Alabama, Florida, Georgia, Missouri, Pennsylvania and Texas.

Consolidation of counties has been made permissive in Nebraska, Minnesota, Idaho and Texas.

County-consolidation measures, either local or statewide, were considered by the Legislatures of the following thirteen states—California, Colorado, Indiana, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, Oregon, Texas, West Virginia, Wisconsin and Wyoming; and the possibility of general reorganization of local government was weighed by seven State Legislatures—Indiana, Iowa, Kansas, Missouri, New York, Tennessee and Wyoming.

Legislative Action

Here and there throughout the country important steps have been taken by legislatures. Missouri has provided for a mandatory county budget system, for the audit of county accounts by the state, and for the consolidation of certain county offices. Kentucky passed five county reorganization bills, perhaps most important among them a mandatory county budget law. The New York State Legislature at its regular session in the spring passed a bill permitting any county outside New York City to draft and adopt a charter for its own government. The special session of the New York Legislature this last summer passed a joint resolution in behalf of a constitutional amendment which would permit thoroughgoing reorganization of county government, including transfer of functions from one unit of local government to another, and abolition of unnecessary units. This resolution must, of course, be repassed by the next Legislature and then be submitted to popular vote before it becomes law. In Virginia the Legislature abolished the fee system for local officers—a much-needed reform in local rural government in Virginia. West Virginia has provided a county unit for schools.

Something of the conception of progress as change must be introduced into any discussion of local government. Otherwise it is necessary to set up standards of measurement for progress, and any attempt to do this runs immediately into alleged conflict between efficiency in administration and local self-government. If we consider that the boundaries of local self-government are necessarily confined to the borders of our present counties, then any change in the area of the county or the abolition of the county thereupon immediately and seriously affects home rule and can be considered retrogression rather than progress.

Amputating County Limbs

To be more specific, take the recent happenings in Virginia and North Carolina. In the latter state the county is on its way to being abolished through amputation of its functions. Is this progress or retrogression? So far as we are at present able to judge, it has made for increased efficiency—the tax dollar is doing more work. If increased efficiency is the criterion by which we judge progress, we shall be satisfied. There is a school of thought of no mean proportions, however, which maintains that in the interests of democracy it is necessary to sacrifice something of efficiency—that we must start by assuming that a dictatorship, government by "the man on horseback," is necessarily the most efficient, and that we must put up with some bungling in order to have something to say about our own affairs. This group might approve as progress any step which led toward increased efficiency within the county, but would condemn as leading in the wrong direction any strides toward abolition of the county.

For my own part, I would challenge the conception that efficiency and democracy are inconsistent and maintain that where failure is self-evident, it is probably due to causes which can be reached. In the successful operation of the manager plan in more than 445 cities throughout the country, we have introvertible evidence that it is possible to have responsive democratic local government which at the same time is efficient. I would also challenge the view that local self-government need or should be limited to our present units of administration. How large the unit can be depends upon a great many factors, among which are the literacy and breadth of interest of the population, geographical considerations, economic and social ties. In

some regions people are state-minded, and it is distinctly questionable whether in such sections there is need for county government at all. We know there is not in a small state like Rhode Island, which in area is smaller than some of the counties in the West. Can North Carolinians and Virginians ultimately be brought to think of local government entirely in terms of state? Is it close enough to them? Undoubtedly it is for some functions of local government, but is it for all functions?

Widening Horizons

Throughout the country there is very definite evidence of this same sort of expanding in people's thinking. In states in which counties are broken up into townships for the purpose of administration, citizens are endeavoring to burst the bonds of these smaller units which no longer serve a useful purpose but are merely an unnecessary and wasteful extravagance. We pay a lot for our love of tradition. It is perhaps the most expensive luxury we support. We can scrap a 1928 automobile without a qualm, but we can't scrap a seventeenth century government. It's unthinkable!

There are five possibilities for progress in county government. They are: (1) change in the form of the government; (2) change in the area of the government; (3) change in the functions of the county; (4) abolition of the county and township in those states which have townships; and (5) improvement in administrative methods. This latter, of course, should go hand in hand with any of the other changes, but some progress can be made under present county organizations.

Counties, of course, are very different creatures in various parts of the country. They vary in size from San Bernardino, Calif., with an area of 20,175 square miles, to the old county of New York with 22 square miles. There are five counties in Texas with less than 100 persons living within their borders, yet there are three counties in the country containing more than 2,000,000 people, and five others containing over a million.

Manager, First Need

They have, however, one thing in common—a decentralized administration which makes for waste and inefficiency. A single responsible executive is generally recognized as the *first* need of a modern county government. Every survey that has been made of county government to date has recommended that steps be taken to provide a greater degree of centralization of responsibility.

The second possibility for improvement in county government we recognized was change in the area of the county. In consolidation of counties lies a tremendous opportunity for savings.

Citizens of state after state are beginning to question whether the sentiment involved in maintaining present county lines is worth the price. In Tennessee, for example, James and Hamilton Counties were consolidated in 1917, and the merger has resulted in much more economical administration over the entire area. The same is true of the merger of Fulton, Campbell and Milton Counties, Georgia, last year.

A year ago the Research Commission of the state of Mississippi made a thorough study of possibilities of economy through consolidation of counties. The situation in Mississippi was peculiarily favorable for such a study because of the great variation in the size of Mississippi counties. The Commission was able to take one large county and compare the cost of administration in that county with the cost of administration in a group of small counties with approximately the same total area and population. The Commission discovered, for example, that the four small counties of Alcorn, Prentice, Tippah and Tishamingo, operating separately, spent for administration four time as much as Sunflower County, more than twice as much as Lauderdale County, and almost twice as much as Bolivar County, each of which has approximately the same population and valuation.

Convincing Figures

This kind of statistics is making an impression. But so far the impression is on our thinking—it has not translated itself into legislative action to any extent. After years of talking, the 3,072 counties have been reduced to 3,059!

Real possibility for improvement in county government is apparent through transfer of functions from the county to some other unit of local government. In a business, if one department does not do a job adequately but it is impossible to abolish the department, the management immediately takes that particular job away from the department concerned and gives it to somebody else. That is what Virginia and North Carolina have been doing with highways and schools. And it's not so difficult. The same farmer who would not consent to have his county merge with the one next door would not feel badly at all if the job of road building were turned over to the state and the cost of the work obtained from sources other than the general property tax. He may be selling his home rule but he's keeping his farm.

Improvement in administrative methods in county government is going on all the time. Spurred on by state specifications, by taxpayers' demands for reduction in the cost of government and for a clear picture of what is happening, and by a need of self-justification, county officials are slowly improving their methods, installing budget systems here, centralized purchasing there, more scientific assessment methods somewhere else. Antiquated accounting methods are beginning to yield to the onslaught. The day when the personal check book of the county treasurer carried all the records is beginning to pass, as is the day of hand copying in the register of deeds office when photostatic recording of documents is far cheaper and done with an accuracy not open to challenge. Tax collection is still one of the sore spots, but here also the alarming increase in delinquent taxes is forcing attention in the direction of more efficient methods of tax collection and ways of bringing home to the citizen his responsibility for payment.

American Bar Association Appoints Special Committee on the Law of Municipal Corporations

Announcement was made last month of the appointment by President Scott N. Loftin, of the American Bar Association, of the following persons as members of the special committee on the Law of Municipal Corporations:

C. W. Tooke, New York City, Chairman; L. Arnold Frye, New York City; Henry P. Chandler, Chicago, Ill.; Giles J. Patterson, Jacksonville, Fla.; Hon. Eugene McQuillin, St. Louis, Mo.

The Galveston Municipal Airport

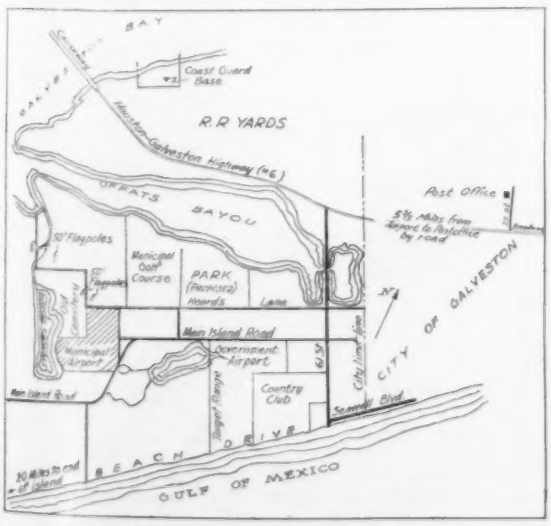
THE island of Galveston is 30 miles long. About 9 miles from its eastern end and only five miles from the center of the business section the city has turned a tract of uncertain value into a distinct asset. By its very location Galveston cannot expect to be on a transcontinental air line, but its island isolation makes it an ideal location for air services to Houston and other northern Texas cities. The gravel and asphalt roads leading from the city to the airport are in excellent condition and permit rapid and easy access to the port.

The Airport Tract

The ground taken by the city for the airport is roughly L-shaped and contained practically no objectionable hillocks to be removed, but there were many soft spots that have been eradicated so that heavy planes may land at any point in the area. Instead of using paved runways, planes may take off from any part of the field. There are three designated runways which are used most of the time, since they head into the prevailing winds. There is a 2,500-foot north-and-south runway, a 2,700-foot runway bearing north 60 degrees east, and an east-and-west runway. The prevailing winds, as shown by the wind rose, are: south, 21 per cent; north, 14 per cent; southeast, 29 per cent; east, 11 per cent.

As the entire area has a sandy foundation topped with a heavy growth of Bermuda grass, there is no trouble with dust, and no artificial drainage system was required. A warming-up apron, also L-shaped and about 130 feet long on the outer sides of each leg and 50 feet wide, is located immediately in front of the large galvanized iron hangar at the intersection of the runways. This has a firm foundation of shells, and is knitted together with a heavy growth of Bermuda grass. The entire area of the airport is constantly watched for soft spots, and the last area in which any difficulty had been experienced was regraded and filled, using CWA labor, last winter.

The airport is completely equipped with border lights,



MAP OF THE LOCATION OF THE AIRPORT WITH RESPECT TO THE CITY

THE MUNICIPAL HANGAR AND THE ADMINISTRATION BUILDING (RIGHT) AT THE GALVESTON AIRPORT

obstruction lights, a lighted wind cone, and two banks of five 3,000-watt drum type floodlights located in the north and south ends of the field, either bank capable of lighting the entire field. The border lights and cone beacon operate from 30 minutes after sundown until daylight.

Electricity is supplied by the local power company, with the border lights on a 110-volt circuit and the floodlights on a 32-volt circuit, both operated by remote control from the administration building.

The Municipal Hangar

The municipal hangar measures 82 x 100 feet inside and is built of a steel framework with corrugated iron sides and a corrugated asbestos roof, a cement floor and a Byrne canopy type electrically operated door, furnished by the Detroit Steel Products Co.

Complete mechanical service for airplanes is available at the field, and three brands of aviation gasoline are stored in underground tanks. The fire-fighting equipment consists of Foamite and Pyrene extinguishers as well as a 3-inch standard fire hydrant. Water supply is furnished by an 8-inch water main from the city reservoir, with an approximate pressure of 60 pounds. From eight to ten planes are regularly housed in the municipal hangar.

Administration Building

The administration building is V-shaped and two stories high. The lower floor has a waiting room and office, a women's rest room on one side and a men's rest room and shower on the other. The upper part is occupied as living quarters by the airport manager. From the windows in both the upper and the lower story there is a full view of the airport.

COST OF CONSTRUCTION AND OPERATION

Land	$14,398.78
Improvements	50,636.25
$65,035.03 to close of fiscal year 1933-34	
Operation and maintenance, year 1933-34	$3,817.86

Activities at the Airport

The regular activities at the Galveston municipal airport consist of private flying, executive flying and student instruction, as well as the carrying of passengers on cross-country flights. The principal operators are the Galveston Flying Service and the Airlines of Long and Harman, Inc. Robert Scholes is Airport Manager.

$250,000,000 PWA Projects for New York

THE projects located by symbols on the photograph total $179,538,741 and include some of the largest engineering and construction jobs in the world. They will provide 1,079,328 man-months of direct employment for the workers of the locality and probably twice as much indirect employment in New York and elsewhere.

Not indicated on the picture are more than $19,000,000 of smaller, scattered PWA projects, including streets and sewers, in the metropolitan area. The quarter-billion also includes other PWA expenditures in the area.

L-1, Tri-Borough Bridge, $44,200,000

L-2, Midtown-Hudson Tunnel, $37,500,000

L-3, Bronx "Hillside" housing project,* $5,060,000

L-4, Woodside, Queens, "Boulevard Gardens" housing project,* $3,450,000

L-5, Eighth Avenue Subway extension, $23,160,000

L-6, Queens General Hospital, $800,000

L-7, garbage disposal plants, $4,000,000

L-8, Bellevue Hospital additions, $4,978,000

L-9, Newark Airport, $22,000

L-10, Hoboken Viaduct, $136,000

L-11, Bayside High School, $2,250,000

L-12, Grade and High Schools, $2,268,500

L-13, pier improvements, $567,500

L-14, Yonkers sewers, water mains and pumping plant, $1,074,000

L-15, Great Neck sewers, $705,000

L-16, grade crossing elimination, $460,000

L-17, railway-highway crossing, $385,500

L-18, Jewish Memorial Hospital, $350,000

L-19, school, $384,100

L-20, concrete deck pier, $744,400

L-21, two-story shed and relocation of sewers, $1,282,000

L-22, two-pier dumping platforms and sheds, $207,000

L-23, pier sheds, $1,193,000

L-24, Mott Haven Health Center, $185,000

L-25, jail, $989,200

L-26, Health Center, $214,000

L-27, Laboratory Building and new Animal House, $700,000

F-1, Ellis Island, new buildings, sea-wall, remodeling, $1,151,800

F-2, Governor's Island, Fort Jay, buildings, water system, roads, hospitals, etc., $582,024

F-3, Statue of Liberty, improvements to landing walls, interior lighting systems, etc., $31,500

F-4, construction of new naval vessels, Brooklyn Navy Yard, $1,013,000

F-5, 40-foot channel to Navy Yard, 35-foot channel to Long Island Sound, $1,456,000

F-6, Rockaway Inlet, 12-foot channel and lights, $77,000

F-7, Mitchell Field improvements, $470,858

F-8, Marine Hospital, $8,272,051

F-9, 40-foot channel, $100,000

F-10, channel widening, $556,373

F-11, riprap protection, $18,450

F-12, Quarantine Station, $72,180

F-13, Quarantine Station, $130,000

F-14, Main Post Office Annex, $5,143,000

F-15, Post Offices, $8,214,400

F-16, dredging, $48,000

F-17, Navy Yard improvements, $1,005,970

F-18, reconditioning ships and pier improvements, $387,550

F-19, remodel Mount Vernon Federal Building, $90,000

F-20, construction of Coast Guard cutters, $3,718,570

F-21, channel improvements, $175,000

F-22, Perth Amboy anchorage area, $817,000

F-23, removing Buttermilk Channel shoal, $131,000

F-24, Fort Hamilton, construction of non-commissioned officers' quarters, $9,315

F-25, construction of navy vessels, Mariner's Harbor, $10,050,000

(* *Private projects; L, local; F, undertaken by Federal Government.*)

FORWARD STEPS

Reported by
Municipal Officials, Chamber of Commerce Executives, and Others

Bloomfield's New Concrete Stadium

BLOOMFIELD, N. J.—A reinforced concrete stadium has been constructed during the past spring and summer at the High School athletic field in Bloomfield. It was started as a Civil Works Administration project, on March 6, and was taken over and completed by the Works Division of the State Emergency Relief Administration after the CWA closed, on March 31.

The structure has a seating capacity of 7,500, and comprises eight sections along the westerly side of the field, with provisions for future extension along the north side. It is 374 feet long and 26 tiers high. At present it is supplemented by wooden bleachers.

Employment was provided for 265 men during construction, which lasted 16 weeks. The concrete plant consisted of a portable ½-yard Ransome mixer with a 40-foot mast from which the concrete was shot in place. The plant operated along the rear of the structure. Sectional wooden forms were used. Enough form work was prepared in advance for three sections of the stand. These forms were re-used as often as necessary. Each section is entirely separated from the rest of the structure by an expansion joint.

Form lumber used	50 M bd. ft
Reinforcing	60 ½ tons
Concrete	1,520 cu. yds
Redwood seats	19 M bd. ft.

The total cost of the work was $88,114, of which $59,000 was for wages, and about $5,000 for materials, both of these items being paid for by the CWA. To finance the balance, about $24,000, the town borrowed $14,000 from the local bank to help pay for materials, and the sum of $10,000 was contributed by the High School Athletic Association under a loan by agreement with the Board of Education and the Town Council, to be used for materials, architect's fees, etc. These funds are to be repaid, including interest thereon, from receipts from games and other events in the stadium. Additional funds will have to be supplied by the Athletic Association for electrical work, equipment and other refinements necessary, since plans provide for locker rooms, dressing rooms, and public toilet facilities underneath the stand.

CHARLES H. DEMAREST,
Mayor.

THE NEW CONCRETE STADIUM IN BLOOMFIELD, N. J.

Liquidation of Tax Title Liens

TEANECK, N. J.—A new method for handling the liquidation of tax title liens has been developed in Teaneck which promises to save the township a large sum. The legality of this method has been confirmed by the New Jersey Supreme Court.

The township has made a contract with a counsellor at law, calling for the redemption of 2,400 tax titles, 90 per cent of them unimproved property. This special agent is permitted to collect all legal fees in connection with the work. The contract calls for the payment of $25 for each tax title redeemed or foreclosed, and later the payment of an additional $20, provided that the person who holds the contract keeps within the schedule of progress set out in the contract, and if sufficient money has been paid into the special trust fund from the interest collected. Failure to keep up with the schedule of work outlined would permit the township to cancel the contract. Also, the total payments made under the contract can never exceed the total interest which has accumulated upon the tax lien and subsequent taxes or assessments since the date of sale.

PAUL A. VOLCKER,
Township Manager.

THE FIRST HALF OF THE BLOOMFIELD STADIUM DURING CONSTRUCTION

Juvenile Court in Allegheny County, Pa., Uses Merit System

PITTSBURGH, PA.—In connection with the Juvenile Court in Allegheny County, a merit system or modified civil service is being developed. Candidates for the Court staff take competitive examinations and are appointed on the basis of the results. This system was worked out by Judge Gustav L. Schramm upon recently taking office and was prompted mainly by a year of aggressive newspaper charges concerning the operation of the Court and featuring sensationally extreme neglect and cruelty to the children.

As the Court has a staff of forty professional workers, it has been no easy task to reorganize it with equal justice to the community and the persons involved. In announcing the new system of competitive examinations for all appointments, Judge Schramm said: "Applicants must be men and women of good

character and reputation, at least 23 years of age and citizens of the United States. Preference will be given to citizens of Allegheny County. Candidates should possess good health and personality, intellectual and emotional maturity, skill and understanding in dealing with people, poise, leadership, resourcefulness, organization sense, executive ability and professional interest in the work. We are determined to make Allegheny County's Juvenile Court system one of the finest in the country."

Those who make application for supervisory positions must have graduated from an accredited college or recognized school of social service and must have had two years' work with a social agency of recognized standing with at least one year in a supervisory capacity. These positions include chief probation officer, parole officer, senior probation officer, supervisor of home finding department, probation officer A-1, probation officer A-2, and adjuster. The chief probation officer's salary is $3,000 a year, and the others range from $2,400 to $1,800. Probation officers are required to have had at least two years' work in a college or school of social work and must have had at least a year of full-time service in some social agency of recognized standing.

ALLEN P. CHILD.

An Electric Fountain in a Park Lake

WILLOW GROVE, PA.—The summer enjoyment of Willow Grove Park was greatly increased by the beautiful electric fountain pictured in the accompanying photograph, which continues to attract increasing numbers of visitors to the park. It was designed by Major F. W. Darlington, architect and engineer, of West Chester, Pa., and was dedicated to the memory of Lieutenant Commander John Philip Sousa, the famous bandmaster and composer, in the presence of Mrs. Sousa and her daughter and a large assemblage. Major Darlington designed the original fountain erected in the park in 1895. The new foundation is exquisite in its gleaming masonry, with leaping jets of water from different elevations, and shining clouds of spray. It is in action twice a day from its charming location in the lake, clearly shown in the picture.

GEORGE A. WENDT,
Secretary, Business Men's Association.

Akron's Tax Dollars

AKRON, OHIO.—The average man on the street is thoroughly convinced that the cost of municipal service is outrageous. He has never analyzed it, but he just knows from his own consciousness that it is true.

Perhaps the figures below will shed some light on the subject.

COST OF SERVICE BY PRIVATE CORPORATIONS

	Annual Cost per Family
Telephone (2-party line)	$ 42.00
Electric light and power (average low)	15.00
Gas (average low)	18.00
For electric refrigerator, add at least $1.25 per month to electric bill	15.00
Total private utility service cost	$ 90.00

COST OF SERVICE BY CITY OF AKRON—1934 BUDGET

*Police protection	$ 7.80
Fire protection	5.62
Street lighting	2.73
Street cleaning	1.20
Garbage collection	1.52
Pure water (including bond interest and principal)	12.00
Public health service	1.68
†*Sewer maintenance and sewage disposal	1.34
Municipal Court	1.34
Parks (the city's orphans)	0.09
*General expense (including Council, all executive offices, purchasing, engineering)	4.63
University of Akron	2.75
	$42.70
*These services yield about $220,000 revenue, which may be offset against expenses	4.00
Net cost per family	$ 38.70
Debt services exclusive of $9 for water included in the $12 annual charge, and including about $10 not included in the above annual sewer charge	38.00
Present cost per family	$ 76.70
Average debt service during next 20 years, at end of which period the greater portion of the serial bonds will have been retired	20.00
Average per family during next 20 years	58.70

Which is still not much in excess of a single telephone ($51)

It is understood, of course, that in addition to the above costs for safety, service, health and debt, there are charges on the Akron family by the independent public-school district and the county. In fact, the total Operation Tax Dollar consists of the following cents: services of city, 10.79 cents; University, 1.98; bonds, 31.04; public schools, 45.25; Summit County, 10.94 cents.

Before closing I should like to present the figures for our water-works system. Operating costs are the lowest of any large city in Ohio, owing to efficient operation, and the bonded debt is the highest, owing to rapid growth. Of each water-works dollar, 22.9 cents is for operation, maintenance and betterment, and 77.1 cents is for bond payments. The 1,203,000 water-works dollars of 1933 were spent as follows:

		Number of Dollars	Part of Each Dollar Cents
1.	Supervising; reading meters; making out bills; collecting water rents; clerical; engineering	$76,000	6.3
2.	Patrolling Lake Rockwell properties and keeping reservoir sanitary	3,000	0.3
3.	Purifying and conditioning the water	34,000	2.9
4.	Pumping to Akron	44,000	3.6
5.	Distributing throughout city and maintaining water mains, house services and meters	80,000	6.6
6.	Maintaining store yard, operating, shop expenses and taxes	25,000	2.1
7.	Meeting old bills from 1932, not paid for until 1933, and for other expense	3,000	0.3
8.	Buying new meters and making improvements	10,000	0.8
		$275,000	22.9
9.	Interest on bonded debt and for retiring bonds	928,000	77.1
		$1,203,000	100.0

E. A. KEMMLER,
Director of Public Service, Akron, Ohio.

Realizing Plans in Hinton

HINTON, W. VA.—Like most of the undertakings in which the city has been engaged during the past year—either in actual performance, or in supervising and planning—the accomplishments realized have been due largely to the aid of the local Civil Works, Public Works, or Emergency Relief Administration. Without the Federal agencies the Planning Board would have been in a helpless financial condition; without the planned projects of the Commission the Federal agencies would have found themselves in a hopeless muddle. By working together in true harmony the results have been splendid and the coordinated program has been carried out with no friction and great satisfaction.

The following projects of the City Planning Commission have either been completed during the past year, or are now under way. The dates listed show the year the work was recommended by the Commission.

1. Memorial Building—Civic Center (1931)
2. Greenbrier Drive—Bellepoint (1932)
3. Highway beautification—tree planting and removal of unsightly obstructions (1931)
4. Remove West End bridge and complete fill (1929)
5. Demolish hazardous buildings (1933)
6. Reclaim neighborhood playgrounds (1932)
7. Build municipal airport (1931)
8. Develop Spring Branch Park (1933)
9. Reforest Reservoir Hill (1929)
10. Landscape street parkway strips (1930)
11. Part of street paving (1930)

The projects yet to be accomplished are divided into short-term and long-range undertakings. Those in the first group are being incessantly pushed to

THE GLEAMING STRUCTURE OF THE ELECTRIC FOUNTAIN IN WILLOW GROVE PARK

the forefront and have some prospect of early completion. They are:

1. Completion of street tree planting program—(officially adopted 1931)
2. Sidewalks along Greenbrier Drive (1932)
3. Widen and resurface Bellepoint Road from Stock Pens to bridge (1932)
4. Open Greenbrier Terrace to traffic (1929)
5. New street signs and house numbers (1934)
6. New bridge across Greenbrier River at Point Park in Eighth Ward (1931)
7. Expand building demolition program to include slum clearance (1934)
8. Complete street paving (1930)
9. Continue landscaping highways (1931)

The planned projects of long-range characteristics are being continuously studied, revised and brought up-to-date. While much more important than those in the short-term group, they are not susceptible of immediate completion. They include:

1. Completion of the civic center (1931)
2. Build two new retreat parks (1934)
3. Develop four passing-through parks (1934)
4. Extend Summers Street through to Route No. 44 beyond Seventeenth Avenue (1929)
5. Continue reforesting surrounding hillsides (1929)
6. Develop and equip additional neighborhood playgrounds (1933)
7. Sewage treatment to prevent stream pollution (1933)
8. Municipally owned and operated electric distributing system; purchasing power from proposed hydro-electric plants on New River (1930)
9. Municipally owned and operated water distributing system, utilizing impounded water of New River dam (1931)
10. Municipally owned and operated natural gas distributing system—buying fuel from pipe lines companies at city gate (1932)

HUME K. NOWLAN,
City Manager.

City Planning Activities in Meadville

MEADVILLE, PA.—This city has been alert to take advantage of labor available under the CWA and RWD and use it to amplify the block plans of the city and to increase the recreation facilities of its parks.

Proper block plans, showing all the property lines, were available for use and on file in the City Engineer's office. These did not show all the structures occupying the properties, however, and it was decided to obtain the necessary data, to be plotted on the maps, preparatory to making zoning studies. About 60 per cent of this work has been completed. Traffic conditions have been improved by increasing curb radii at numerous busy street intersections, and several building-line ordinances have been drawn. Routine work in the administration of several allotments has also occupied the Planning Commission.

Two parks have been added to the city's park system. One is built around an artificial lake, extending two miles up Cussewago Creek, providing fishing, boating and swimming facilities, in addition to which are picnic grounds and room for sports. The other, built around a smaller creek and having a smaller lake, is developed to exhibit the natural growth of indigenous shrubs and trees which are abundant along its shore. Its beauty has been enhanced by the construction of a small masonry dam, a rustic bridge, gravel paths and outdoor fireplaces. It is planned to augment the existing growth by transplantings of other native trees and shrubs so that eventually quite a complete arboretum shall be built. This park is adjacent to a recently developed municipal athletic stadium and playground.

PICNIC FIREPLACES AND DAM IN THE ARBORETUM, MEADVILLE, BUILT BY RELIEF LABOR IN 1934

The two new parks described are part of a larger system of parks to be developed along the entire valley of the Cussewago Creek and Mill River adjacent to the city. The city parks and other publicly owned property have also been improved by relief labor.

ROY L. PHILLIPS,
City Engineer and Engineer for City Planning Commission.

Art Commissions in Cooperation with City Planning Boards

DOBBS FERRY, N. Y.—The association of art commissions with city planning, and the adoption of an aggressive policy by art commissions generally—both measures which hold promise of substantial civic benefits—were proposed in a broadcast by Station WFAS, White Plains, N. Y., September 6, in connection with the "Hour of Living Art" directed by Charlton L. Edholm. The guest speaker, Chairman of the Planning Board of Dobbs Ferry, Westchester County, who was interviewed on the subject of art commissions, called attention to the need for an art commission in every community to supplement planning and zoning boards. Planning and zoning boards are concerned with the appearance of a community which they can improve through proper street plans, location and design of recreational areas, civic centers, waterfront developments, and through wise zoning; while the appearance of a community's buildings, bridges, statues, mural decorations, street signs and lamps, and other works of art, is a feature over which only art commissions are capable of exercising jurisdiction by preventing the erection of architectural monstrosities and safeguarding the community against the blight of bad art.

When the erection of a new post office was imminent in Dobbs Ferry and it was discovered that the state law does not authorize villages to create art commissions, the Dobbs Ferry Planning Board appointed the Dobbs Ferry Art Commission to act in an advisory capacity to the Board, thus taking advantage of the City Planning Law which authorizes planning boards to employ experts to assist them. The Dobbs Ferry experiment deserves to be successful, and particularly for small municipalities presents a feasible method of securing art commissions and the desirable coordination of their work with that of city planning boards.

In view of such association of city planning with art commissions, it was not surprising that the speaker also advocated that art commissions should step out of their present character of merely critical art juries which confine their attention to public works, and should become aggressive by discouraging bad art privately erected, and by promoting art exhibitions and galleries, the public acquisition and appreciation of good works of art, the beautification of municipalities through the planting of street trees, the landscaping of playgrounds, waterfronts, and other public areas, and the marking and preservation of historic sites; and, especially at this time of national emergency, aiding in the promotion of good housing through attractive modernization and new construction.

By rendering such service art commissions can materially assist city planners to conserve and increase the beauty of our municipalities so that their attractive appearance will become one of the most valuable of their assets and a constant source of satisfaction and inspiration.

HENRY C. KLEIN.

The Municipal Bond Market

Typical sales of new issues, from recent issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$1,090,000	Rochester, N. Y., School, Bridge	4	9.62 Avg.	3.48
1,000,000	Texas, Relief	3.75	5 Avg.	3.74
105,000	German Township, Pa., Funding	4.25	5.33 Avg.	3.77
102,000	Washington, Ind., Electric Light and Power Plant	4	18.74	3.88
4,000,000	Massachusetts, Emergency Public Works	2.25	4.63 Avg.	2.22
100,000	Beverly, Mass., Water	2.25	1-10 Ser.	2.22
250,000	Suffolk Co., N. Y., Emergency Relief	2.6	6.16 Avg.	2.59
238,000	Franklin Co., Ohio, Poor Relief	2.75	3 Avg.	2.65
125,000	Linn Co., Ia., Funding	3	5.33 Avg.	2.82
100,000	Owosso, Mich., Sewage Disposal Plant	4.5	8.75 Avg.	4.63
716,000	White Plains, N. Y., Relief, Refunding	4.90	5.65 Avg.	4.90

TRAFFIC CONTROL AND FACILITATION

Conducted by Publications Committee, Institute of Traffic Engineers, 175 Fifth Ave., New York

Maxwell Halsey, Chairman, Harry Hemmings, Reyburn Hoffman, Benoit Laberge, Theodore T. McCroskey, Donald M. McNeil, A. J. Naquin, Hawley S. Simpson, Arthur G. Straetz, Peter J. Stupka, Lawrence S. Tuttle, John C. Wrighton

More on Compulsory Motor-Vehicle Inspection by Cities and States

IN one large city in 1932 an inspection of commercial vehicles, taken as they came, showed their brakes only 50 per cent what their manufacturers had made them. A little labor greatly improved the stopping efficiency.

One answer to the maintenance problem surely lies in state- or city-operated inspection bureaus where all vehicles are required to report at intervals. The larger operators find little or no trouble at the inspection bureaus; but the owners who drive their own trucks—and account for 76 per cent of all commercial vehicles—have found their equipment in great need of repair. Yet small owners who at first objected to the Memphis bureau, because of the 50-cent fee, later stated that the alignment inspection alone saved in tire wear much more than the inspection fee.

50 Cents Per Car Pays Profit

Since the establishment of compulsory vehicle inspection in Memphis, as described on page 74 of last month's issue, Des Moines has done the same and the state of Maryland has adopted statewide inspection.

Inspection includes brakes, steering, alignment, headlights, tail-light, windshield wiper, rear-vision mirror and horn.

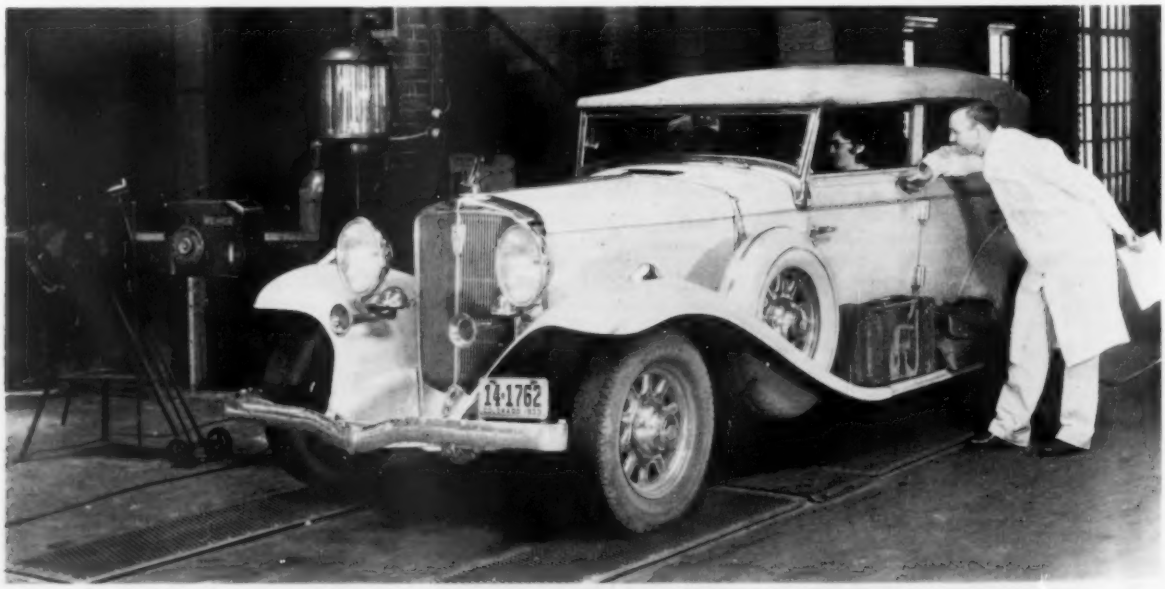
The public advantages are: adequate inspection; definite standards for the quality of garage service; headquarters for eyesight tests, driver examinations and licensing; recovery of stolen cars through checking motor numbers; continuous dissemination of safety information; "shade tree and fly-by-night" service shops disappearing under necessity of attaining definite standards; car owners educated to safety tests and given a check on their service garage, and garage owners a check on their mechanics; increase of garage employment.

In the first six months more than 37 per cent of the cars inspected had to be rejected. Owners of rejected cars are given one week to make necessary corrections. They may make these themselves or have them made where they please. There are 48,000 cars, trucks, busses, taxicabs and other vehicles to be tested twice each year. The death rate from automobile accidents per 100,000 population is 16.4, compared with 19.8 for the 52 weeks ending September 30, 1933.

Following is a typical daily report of the Memphis bureau (September 19, 1934):

	Today	Total 2nd Inspection
Cars found O.K.....	752	14,002
Cars rejected.....	420	10,586
Rejected and returned.	467	8,372
Total inspections.....	1,172	24,588
REASONS FOR REJECTIONS		
Brakes	323	7,685
Headlights	198	5,415
Wheel alignment	60	1,048
Steering	35	924
Windshield wiper	44	850
Tail-lights	66	1,533
Rear-view mirror	2	108
Horns	13	384
Windshield discolored .	24	414
Cash:	$370.00	$6,715.00

Testing equipment cost $4,500; office equipment cost $2,000; monthly payroll of $2,300 takes care of 18 inspectors, 2 porters, a cashier, a clerk, a supervisor and his assistant. The equipment consists of two universal brake testers, one heavy-duty brake tester, three wheel-alignment indicators and six headlight



THE CAR IS ON THE TREAD PLATES OF A WEAVER BRAKE TESTER

The lantern-like device above and behind the far headlight is the instrument that records brake performance. The camera-like apparatus at the left is a headlight tester. An inspection bureau needs one other piece of equipment —a wheel-alignment indicator

testers, all made by the Weaver Manufacturing Co., Springfield, Ill. Revenue from the 50-cent fee pays all costs and shows a profit. The advantages of this plan are so obvious that it is little wonder that it is receiving nation-wide consideration.

Public Likes the Plan

Public acceptance of the plan has been good. Garage mechanics realize that for the first time their employer and the public have a check on their quality of work.

Brakes on a majority of cars and trucks are of a design likely to lose their efficiency. Competition is keen and the market demands are for comfort, acceleration and top speed. City inspection gives the owner a kind of information that has been very difficult for him to get before, and teaches him the value of good workmanship and safe brakes. When motor-vehicle inspection bureaus become more numerous, it will doubtless bring about a rapid change in design with emphasis on safety.

Had there been no surviving witnesses to the recent Ossining-New York bus accident, it is probable that the report would have indicated "cause unknown" or "careless driving." A disastrous fire following any accident usually makes it impossible to determine the braking effort that obtained prior to the accident. Among other things found defective on this bus was a loose clutch pedal which appears to have become entirely detached when the gears were shifted to neutral, thus preventing a shift to low on descending the grade to the place where the accident occurred.

Present State System Outgrown

A number of states have long recognized their responsibility by providing a system of motor-vehicle inspection which has had a good effect in making the public safety-conscious. The system of inspection provides for a periodic appearance at public garages designated by the state. The motor industry has now outgrown such a system, and several states are giving serious thought to a change to the Memphis plan. Higher speeds require better brakes, steering and tires, which call for closer supervision of the inspection than is possible under the state plan. One state has 8,000 inspection stations and only 30 supervisors.

Such a system tempts the appointed garage to favor friends and regular customers who provide its livelihood, and to over-inspect the casual customer in order to obtain all the repair work possible. Consequently, consideration is now being given by some states to a state-equipped and -operated inspection system with stations so distributed as to bring the entire car population reasonably near. The better class garages favor such a change, since the present system has many well-known evils. The new system with two inspections per year would cost 65 cents annually, and the first cost, including housing, would be less than one dollar per car registered.

—Based on material prepared by G. E. Weaver, Vice-President, Weaver Manufacturing Co., Springfield, Ill.

Getting the Pedestrian Across the Street

THE pedestrian is the forgotten man in traffic, said C. R. Rex, of the General Electric Co., Chicago, before the Institute of Traffic Engineers at Cleveland; and the trouble is that some of the agile, always-in-a-hurry pedestrians would rather be forgotten. They think control is for the benefit of vehicular traffic only. The problem is one of education and an arrangement of signals controlled in such a manner as to obtain and deserve the pedestrian's confidence. The signal arrangement can be any of the three generally recognized types, and education should be as follows:

For exclusive red or red amber interval, educate pedestrians to cross with the combination of red and amber signals only, not to cross on green or on red, and educate drivers to proceed on green, to clear intersection on amber or green amber, and to stop on red or amber.

For green-amber clearance cycle, pedestrians to cross with green only and not to cross on green-amber overlap, amber or red; and vehicle drivers to proceed on green, or green-amber overlap, to clear intersection on amber alone, and to stop on red.

For any other type of pedestrian crossing, educate pedestrians to cross only when given a distinctive blue-white WALK signal. Prior education of drivers regarding the meaning of red and amber is not affected.

Solves Traffic Problems

THE Harvard University Bureau for Traffic Research has developed a comprehensive and uniform technique for the study of traffic problems in cities and towns by both long-count and short-count methods. The innovation is that it provides without extra cost a comprehensive analysis of the trade and distribution problems in the city as well as the data for relief of the accident and congestion problem. Dr. Miller McClintock, Director of the Bureau, announces that wherever a city has a problem of a typical or universal nature and an appropriation for solving it, the Harvard Bureau will lend staff assistance without charge, through John Paver, who for the last two years has been responsible for the traffic and trade researches of the Harvard Bureau. Several cities have already indicated their desire to utilize the services of the Bureau.

First School for Traffic Officers Starts

MORE than 100 students, 70 from Chicago, and the remainder from ten states from New York to Tennessee to Nebraska, took the opening course, October 8-20, of the Traffic Officers' Training School at Evanston. The curriculum includes, in addition to the more expected subjects, traffic planning (B. W. Marsh), first aid (A. J. Hagel), accident investigation (M. N. Halsey), motorcycle demonstration (Harley-Davidson Motor Co.),

NORTHWESTERN UNIVERSITY

Traffic Officers' Training School

Directed by

Political Science Department, Northwestern University — Police Department, Evanston, Illinois

This is to certify that _____

has successfully completed the two weeks' course of the Traffic Officers' Training School, October 8-20, 1934.

Head, Department of Political Science — Chief of Police, Evanston, Illinois

CLASS OF OCTOBER 8-20, 1934, THE FIRST TO RECEIVE A CERTIFICATE FROM NORTHWESTERN TRAFFIC—AND THE CERTIFICATE

Tax Delinquency by Types of Realty

By LEO DAY WOODWORTH
Formerly Chief Statistician, Division of Real Estate Taxation, Bureau of the Census

A STUDY of the ad valorem property taxes that are not paid before penalty date by owners of the various types of real estate—types being determined according to kind of improvement—is but one phase of the breakdown of the general problem of tax delinquency. Such a breakdown is obviously a prerequisite to any discussion of, or legislation on, the subject.

Types of improvement on delinquent property are perhaps of less real importance in this connection than are types of ownership, which were discussed in the Fourth Report of the New York State Commission for the Revision of the Tax Laws, 1934.

But types of improvement can be enumerated and subjected to statistical study with fewer complications than is possible with types of ownership. Therefore, such an effort was undertaken as a Federal project of the Civil Works Administration, organized in December, 1933, within the Bureau of the Census as the Division of Real Estate Taxation. The primary objective of that project was a study of urban tax delinquency.

Preceded only by studies of such distribution in Detroit and Chicago, and availing of the field schedules of the real property inventory that was being made in selected cities by the Bureau of Foreign and Domestic Commerce with the assistance of the field organization of the Bureau of the Census, the current[1] (1932-33) tax delinquency by specified types of property was surveyed in the early months of 1934[2] by sampling in 62 selected cities with a combined assessed valuation of $6,446,000,000 and tax levies of $266,000,000, these cities being distributed throughout the country and ranging in size from Casper, Wyo., to Cleveland, Ohio.

The relative standing of the real estate analyzed and combined into ten distinctive classifications of types of improvement, is shown in Table A according to the median rate of delinquency in each of the ten groupings by type in the 57 cities that could be analyzed for current delinquencies alone, thus excluding five cities in which the levies include accumulated delinquencies. These median rates range from 31 per cent delinquency for vacant lots and 27 per cent for apartment houses to 18 per cent for one-family dwellings, and 5 per cent for industrial properties.

TABLE A—MEDIAN RATES OF CURRENT DELINQUENCY BY TYPES
LEVIES OF 1932-33, IN 57 CITIES REPORTED
Compiled by the Bureau of the Census, Division of Real Estate Taxation

Rank	Type of Improvement	Median Rate of Type Delinquency Percent
1	Vacant lots	31.0
2	Apartment houses	27.6
3	Multiple dwellings	24.1
4	Hotels, clubs, rooming houses	20.6
5	Garages, gas stations, etc	18.8
6	Flats over stores	18.5
7	One-family dwellings	18.2
8	Stores	16.4
9	Office buildings, warehouses, theaters	7.7
10	Industrial properties	5.7

The details of distribution by types of improvement are here summarized in Table B by showing the number of the 62 cities in which each of the ten types of property was found in the respective ranks from 1 to 10. Thus, in twenty-one cities the vacant lots showed the highest average percentages of delinquency, in ten cities the second highest, and in ten cities the third highest, and in none the lowest. Apartment houses had the highest average percentages of delinquency in seventeen cities, and second highest in five cities. One-family dwellings had highest average percentages of delinquency in but one city, second highest in four, third highest in ten, fourth highest in nine, and fifth highest in fifteen. Industrial properties had lowest percentages of delinquency in thirty-two of the cities analyzed, second lowest in eight, third lowest in eight, and highest in two.

Distribution of delinquency in these studies is only on the basis of relative volume of delinquency in each of the general types indicated, rather than by definite apportionment to types of property of the total taxes uncollected, in the absence at this time of data on the total value of properties of the various types or other basis for accurate comparison.

The titles of the groups are self-explanatory, except that multiple dwellings comprise buildings with two to eight dwellings, and apartment houses are buildings with over eight dwellings.

The details as to the average rates of delinquency by type groups as analyzed in the 62 cities respectively, have not yet been summarized. No further tabulation of these data is now in prospect, because of termination of the project by limitation on August 31, 1934, and consequent disbanding of the organization. However, owing to the wide variations between the selected cities in such fundamentals as (1) economic development and status, (2) relative local importance of the various types of property analyzed, (3) legislative and administrative rules and policies, and (4) differences in sampling that were unavoidable in this survey, and owing to the further fact that no other city in the country can possibly duplicate the conditions that exist in any one of the cities that were included in the study, the principal findings of the project as summarized in Tables A and B will indicate the standards by which local conditions can be judged on the one point as to relative tax delinquency by types of property.

What may be the volume of delinquency by the various types—in other words, the degree of responsibility by each type for the aggregate of uncollected taxes either from the current levy or accumulated over a period of years—is a question that can be determined only by examination of the records in each locality. It appears, however, from the extensive survey here referred to that one-family dwellings are of much less importance than more speculative holdings as types of delinquent property.

The breakdown of the delinquency problem into its component elements, of which the distribution by types of improvement is but one phase, is basic to sound thinking on this comparatively new problem in public finance which now presses for solution.

—Based on an address before the 27th Annual Conference of the National Tax Association, Boston, October, 1934.

[1] "Current" delinquency (also styled short-term or temporary) is the amount of ad valorem property taxes that remain uncollected for about one year after levy, within which year they normally become subject to penalty. Variations in local collection procedure cannot be given proper weight in such a compilation.

[2] Uniform dates not being available for either levies, delinquencies or these inspections of tax rolls, these data generally are based on levies that became due and payable within the twelve months prior to June 30, 1933 (in this study styled "levies of 1932-33"), and subject to penalty (therefore termed "delinquent" in all but a few states) prior to December 31, 1933, as of which date the survey was intended to be made. Certain departures from this schedule of dates were made necessary by local practices and conditions.

TABLE B—RELATIVE DELINQUENCY BY TYPES OF REALTY IN 62 CITIES
IN ORDER OF SIZE OF MEDIAN RATE SHOWN IN TABLE A LEVIES OF 1932-33 IN 62 CITIES
Compiled by the Bureau of the Census, Division of Real Estate Taxation

Rank by Medians	Type of Improvement	Rankings in 62 Cities Summarized								
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1	Vacant lots	21	10	10	7	3	3	3	3	2	0
2	Apartment houses	17	5	7	8	5	7	2	6	2	3
3	Multiple dwellings	3	11	10	16	9	7	4	1	1	0
4	Hotels, clubs, rooming houses	7	13	7	3	6	6	6	5	4	5
5	Garages, gas stations, etc	2	6	7	6	10	6	13	7	4	1
6	Flats over stores	7	5	7	9	6	6	6	5	7	4
7	One-family dwellings	1	4	10	9	15	11	6	4	2	0
8	Stores	2	4	2	4	7	9	12	11	10	1
9	Offices, warehouses, theaters	0	2	2	0	0	4	4	12	22	16
10	Industrial properties	2	2	0	0	1	3	6	8	8	22

IMPROVING MUNICIPAL ADMINISTRATION

Current Items from the Public Administration Clearing House

175,418 Governmental Units in United States

THERE are 175,418 units of government operating in the United States, according to a count completed after two years' survey by Prof. William Anderson of the University of Minnesota, who presents his results in a pamphlet entitled "Units of Government in the United States," issued by Public Administration Service. Of this number, 127,108 units are school districts; 20,262 are towns and townships; 16,366, incorporated places; 3,053, counties; and 8,580 are miscellaneous units. Estimates previously made have placed the number of existing units anywhere from 250,000 to 700,000.*

It is agreed on all hands that the tremendous number of overlapping and duplicating agencies is intolerably wasteful. Professor Anderson comments. Conceding the difficulties in the way of bringing about a desirable change, he suggests the following steps for the sake of administrative efficiency and economy:

1. Eliminate separate school districts, controlling schools instead by the state, through counties or cities.
2. Eliminate practically all other special districts—those formed for drainage, parks, roads—where they are smaller than existing counties and cities.
3. Dispense with townships as governing units in most of the Middle Western and several Middle Atlantic states by transferring their principal functions to the county.
4. In New Eng'and, consolidate the smaller towns.
5. Create city-county units in the main urban centers to handle all the functions now performed by the city, county and school district.
6. Use the county as the main unit for performing governmental services in the rural areas.

By these eliminations and consolidations local governmental units could be reduced to one-tenth their present number. There would then be about 350 city-counties, each with a central city of at least 25,000 population; about 2,000 counties, rural and part-rural; about 15,000 incorporated places and 500 miscellaneous units. Without question, Professor Anderson concludes, such a number of local units could handle the affairs of local government.

EDITORIAL NOTE: Professor Anderson's figures differ somewhat from the latest estimate of the Bureau of the Census, for which see "Financial Statistics of State and Local Governments: 1932" listed on page 85 of this issue.

Slower Population Growth Affects City Functions

SLOWER population growth, with indication that population may become stationary within the next two or three decades, will have an important effect on municipal activities in the future, according to the October issue of *Public Management*, journal of the International City Managers' Association.

By U. S. census count, the birth rate in this country has declined more than one-third since 1915. If the present trend continues, it is estimated, the population will become stationary within twenty or thirty years somewhere between 135,000,000 and 145,000,000. The birth rate is lowest in the cities, the census shows. The largest cities now have birth rates about 25 per cent below the maintenance level, and in cities under 100,000, the deficit is 10 to 15 per cent. Students of the problem, reports *Public Management*, forecast the following changes of emphasis on municipal functions as among probable results:

The present constantly increasing intensity of land use for business and residence will stop, which will mean a slower recovery from the present slump in urban land values, and adverse effects upon the building industry, unless communities undertake slum clearance or other public building programs. City plans based upon anticipated large future growth will have to be revised in many cases.

It will be necessary to set up other signs than growth in numbers as a measure of municipal achievement. There will be an easing of the problem of providing the physical equipment of schools in the cities, since there will be fewer children as students. The large percentage of older people, however, will make it necessary for cities to pay more attention to public health and accident prevention and to make provision for more cultural and recreational activities for adults.

Keeping the Public in Touch with City Hall

NEWSPAPERS are the best means of letting the public know how the affairs of the city are going, say 70 city managers out of 104 who answered the inquiry of the International City Managers' Association on the methods of reporting they consider the most successful. City managers interested in keeping the public closely in touch with city affairs indicate a variety of ways, in addition to newspaper reporting, by which they attain this end.

Twelve city managers consider talks before civic groups the most important contact that can be made with the public, since it is a personal contact. Short radio talks are also favored, as well as exhibits and demonstrations by various city departments. Eighteen of the cities reporting use the radio to reach citizens. Binghamton, N. Y., in 1933 broadcast a series of talks by bureau and department heads, going on the air twice a week. The Fort Worth, Texas, Director of Health goes on the air every Saturday morning. In Roanoke, Va., the Recreation Department broadcasts once a week.

Fifteen cities, according to the survey, have held open house for all municipal departments with much success. Berkeley's 1934 Open House drew 4,000 citizens; Cincinnati's, more than 70,000. Visitor's day at the water and light plants is common in small cities, the report shows. The Wichita, Kans., Police Department invites citizens to ride with patrol officers, to go through police headquarters and the city farm.

Motion pictures showing various activities of the city government, kept up to date, are used in Winnetka, Ill., and have been shown to over 50 groups in the town. Six other city manager cities use this way of reporting to their people.

Annual reports are a common way of reaching the public. Over half the cities reporting published annual reports for 1933. A third more prepared typewritten reports for the city council, handing them out also to libraries and civic groups. As few as 75 copies of the report are distributed in some cities; in larger ones, as many as 3,000 are sent out. Over thirty cities report that they also issue various types of special reports, such as mimeographed bulletins or newspapers.

Urges New Federal Relief Policy

A FUNDAMENTALLY new relief program giving to the Federal Government complete responsibility for care of the employables of the country, and to the cities and states the job of caring for the unemployables, was proposed by Paul V. Betters, Executive Director of the United States Conference of Mayors and the American Municipal Association, at the annual convention last month of the International City Managers' Association. The proposal is:

1. That the 18 million people now on relief be divided into two general classes —employables and unemployables.

2. That the Naational Government take complete responsibility for care of the employables—those able and willing to work—under a work program.

3. That major emphasis in this work program be given to building low-cost housing.

4. That cities and states assume complete responsibility for caring for the unemployables—those dependent because of old age or mental or physical defects.

"Such a plan," said Mr. Betters, "would eliminate over night this cracking-down process which gets us nowhere and makes it impossible to do any planning. It does not mean that the cities and states are trying to shift the load of the employable relief group to Uncle Sam. It means simply that the cities and states are asking for the right to pay taxes to the Federal Government to pay for the costs of relief, instead of paying the bill out of local taxes."

England has adopted this plan of financing relief needs after fifteen years of relief experience, Mr. Betters stated.

THE CITY'S LEGAL RIGHTS AND DUTIES

Conducted by A. L. H. STREET, Attorney at Law

Accidents

Owner of property in possession and tenant in possession, as to defects arising after lease, held primarily liable for sidewalk accidents due to defects (Pennsylvania Supreme Court: *Bruder v. City of Philadelphia*, 25 Pa. Munic. Law Rep 69, 302 Pa. 378).

Claim filed June 8 concerning injuries sustained March 7 held not filed within three months (Kansas Supreme Court: *Ray v. City of Wichita*, 27 Pac. 2d, 288).

City held not liable for negligent operation of fire truck on way to fire outside city limits (Texas Court of Civil Appeals: *King v. City of San Angelo*, 66 S. W. 2d, 418).

City held not liable for injury to pedestrian falling into old telephone pole hole near sidewalk, same being unobservable (Mississippi Supreme Court: *Dow v. City of D'Lo*, 152 So. 474).

City held liable for injury resulting when loose manhole in street cover was dislodged by automobile (Connecticut Supreme Court of Errors: *Federman v. City of Stamford*, 172 Atl. 853).

Bequests

Bequest of $50,000 to build a hospital in a certain city held invalid for failure to designate legatee (Texas Court of Civil Appeals: *City of Haskell v. Ferguson*, 66 S. W. 2d, 491).

Bond Issues

Bond issue for sewage disposal plant held not to require electoral assent where payment was to be made from rentals for use of system, although there would be general tax liability on rentals proving deficient (North Dakota Supreme Court: *Anderson v. City of Fargo*, 250 N. W. 794).

Councilman's Liability

Councilman held not personally liable for injury to pedestrian when sign over sidewalk fell, in the absence of showing of fault on Councilman's part (South Carolina Supreme Court: *Heath v. Blackman*, 173 S. E. 300).

Debt Limits

Complaint held to state ground for enjoining issuance of warrants as exceeding constitutional debt limit (Montana Supreme Court: *Commonwealth Public Service Co. v. City of Deer Lodge*, 28 Pac. 2d, 472).

Gifts

Will giving property to city, "its authorities to use it for any outstanding purpose for which they deem it best suited—humanitarian or artistic," held valid and not void for indefiniteness (Maryland Court of Appeals: *Van Reuth v. Mayor and City Council of Baltimore*, 170 Atl. 199).

Incorporation Proceedings

Village held validly incorporated as city as against objections that there were no freeholders residing in territory, that members of charter commission were qualified as freeholders through gifts of land, made to qualify them, etc. (Minnesota Supreme Court: *State v. City of Fraser*, 254 N. W. 776).

Industrial Aid

Statute held validly to authorize municipal expenditure to advertise city (Florida Supreme Court: *Jacksonville v. Oldham*, 150 So. 619).

Statute authorizing municipal bonds to build and lease factory held unconstitutional as providing for lending of credit to private corporation (Mississippi Supreme Court: *Carothers v. Town of Booneville*, 153 So. 670).

Inspection Fees

City held entitled to impose fees against railroad for inspecting passenger and freight elevators and buildings, there being no conflict with State Commerce Commission's control over railroad (Illinois Supreme Court: *City of Chicago v. Alton Railroad Co.*, 188 N. E. 831).

Libel

Newspaper article impugning Mayor's motive in appointing City Attorney held not actionable (New York Supreme Court, Appellate Division: *Tanzer v. Crowley Publishing Corp.*, 268 N. Y. Supp. 620).

Licenses

Requirements for license to sell farm products in farmers' market upheld (New Jersey Supreme Court: *Van Der Vliet v. Board of Commissioners, Newark*, 169 Atl. 668).

Gasoline stock stored by wholesaler for use of retailer as needed held subject to tax by city (Georgia Supreme Court: *City of Hogansville v. Wofford*, 174 S. E. 530).

License tax imposed on chattel loan concerns upheld (Washington Supreme Court: *Austin v. City of Seattle*, 30 Pac. 2d 646).

Minimum Wages

Statute providing for minimum wages for public employees doing manual or mechanical labor upheld (Arizona Supreme Court: *State v. Anklam*, 31 Pac. 2d, 888).

Municipal Airports

Property owner's petition held to state grounds for injunctive relief against spreading dust in excessive quantities, etc., but not on ground of apprehension against falling planes, etc., nor because of low flying (Georgia Supreme Court: *Thrasher v. City of Atlanta*, 173 S. E. 817).

Municipal Bonds

Water-plant revenue held not subject to second mortgage until payment of first debt (Texas Commission of Appeals: *City of Houston v. Allred*, 71 S. W. 2d, 251).

Bond ordinance and election proclamation held not bound to state maturities, and submission of question whether interest be paid semi-annually held not necessary; but if question is submitted, vote is controlling (Oklahoma Supreme Court: *Oklahoma Utilities Co. v. City of Hominy*, 31 Pac. 2d, 932).

Municipal Prosecutions

Conviction of violating a police ordinance held not sustainable because there was no evidence that offense was committed within city limits, the courts being unable to take judicial notice that a certain locality lies within a given city (Illinois Supreme Court: *City of Chicago v. Brent*, 190 N. E. 97).

Municipal Utilities

Contract to pay for electric plant out of earnings held not to create debt within constitutional debt limitation (United States Circuit Court of Appeals, Eighth Circuit: *Iowa Southern Utilities Co. v. Cassill*, 69 *Fed.* 2d, 703).

City held empowered to contract with natural gas company to deliver gas to city's light plant and public buildings, with privilege to the company of laying necessary mains, etc. (Kansas Supreme Court: *State v. City of Coffeyville*, 28 Pac. 2d, 1032).

Official Eligibility

Under special charter provisions, failure to pay poll tax and qualify as voter did not disqualify one to become mayor (Georgia Supreme Court: *Beazley v. Lunceford*, 173 S. E. 852).

Ordinances

Adoption of an ordinance is not proved by merely showing its passage by council; proof of approval by mayor or passage over his veto is essential (New Jersey Supreme Court: *West Essex Building & Loan Assn. v. Borough of Caldwell*, 171 Atl. 671).

Mere apprehension of arrest or interference with property rights held not ground for enjoining enforcement on ground of its illegality (Georgia Supreme Court: *Asa G. Candler, Inc., v. City of Atlanta*, 174 S. E. 129). See, also, *City of Douglas v. South Georgia Grocery Co.*, 174 S. E. 127.

Public Peace

Persons congregating on street, including entranceway to building, and refusing to move on when so ordered by police held guilty of statutory offense of disorderly conduct (New York Court of Appeals: *People v. Hipple*, 188 N. E. 725).

Public Utilities

Factors to be considered in determining reasonableness of water rates determined (Connecticut Supreme Court of Errors: *City of New Haven v. New Haven Water Co.*, 172 Atl. 767).

City paying money to electric company under ambiguous contract held not entitled to recover same, but not bound by such payments to continue the same in the future (Nebraska Supreme Court: *City of Scottsbluff v. Western Public Service Co.*, 254 N. W. 712).

Public Utilities Commission order prescribing gas rates upheld (United States Supreme Court: *Dayton Power & Light Co. v. Public Utilities Commission of Ohio*, 54 Sup. Ct. 647).

Ordinance fixing natural gas rates held invalid for want of valid statutory authorization (Texas Commission of Appeals: *Coleman Gas & Oil Co. v. Santa Anna Gas Co.*, 67 S. W. 2d, 241).

City held entitled to recover on bond for gas company's failure to carry out gas franchise accepted by it (Kansas Supreme Court: *Kansas City v. Industrial Gas Co.*, 28 Pac. 2d, 968).

City held not entitled to rehearing on Public Utility Commission's order fixing rate for cradle telephone service (Ohio Supreme Court: *City of Cleveland v. Public Utilities Commission*, 189 N. E. 5).

Public Works

Minimum wage and hours of labor law held applicable to home-rule cities (Idaho Supreme Court: *State v. Jaastad*, 32 Pac. 2d, 799).

Purchases

Petition to recover balance for fire hose held to state valid claim against city (Kentucky Court of Appeals: *Fabric Fire Hose Co. v. City of Louisa*, 69 S. W. 2d, 726).

Railroads

Apportionment of cost of subway under railroad between city and railway company upheld, despite company's contract to abolish grade crossing (Illinois Supreme Court: *City of Chicago v. Illinois Commerce Commission*, 190 N. E. 896).

Ordinance limiting train speed to ten miles per hour upheld (Missouri Supreme Court: *Thompson v. St. Louis-San Francisco Ry. Co.*, 69 S. W. 2d, 936).

Statute requiring assent of state public utilities commission to ouster of street railroad held not violative of constitutional powers of local self-government (Ohio Supreme Court: *State v. Cincinnati & Lake Erie Railroad Co.*, 190 N. E. 224).

Salaries

Statutory prohibition against change of city officers' compensation during term held inapplicable to *town* marshal (Texas Court of Civil Appeals: *Little v. Porter*, 67 S. W. 2d, 624).

City foreman's agreement to accept less salary than fixed by ordinance held invalid as against public policy (Washington Supreme Court: *State v. City of Seattle*, 28 Pac. 2d, 1020).

Severing Territory

Petition to sever from town territory comprising best residential section denied (Iowa Supreme Court: *Creery v. Town of Okoboji*, 253 N. W. 810).

Sewers

Statute enabling construction of sewers payable from rental charges for use upheld (Nebraska Supreme Court: *State v. Price*, 254 N. W. 889).

Delay held to bar attack by property owners upon classification of sewer as main sewer and question of benefits (Indiana Appellate Court: *Bottema v. City of Indianapolis*, 190 N. E. 550).

Sewer outlet held permanent nuisance, entitling aggrieved landowner to recover entire damages in one action (Kansas City, Mo., Court of Appeals: *McClerry v. City of Marshall*, 65 S. W. 2d, 1042).

Corner lot previously assessed for sewer along end held not assessable for another long side, under governing statutes (West Virginia Supreme Court of Appeals: *Fought v. Murdoch*, 172 S. E. 536).

Municipal water-works revenues held validly pledged for payment of bonds to enlarge sewer system, both systems being related (South Carolina Supreme Court: *Roach v. City of Columbia*, 174 S. E. 461).

Sidewalks

Ordinance requiring permit for driveway station for 20 years held not to create commissioner unlimited discretion to refuse permit (Illinois Supreme Court: *R. G. Lydy, Inc., v. City of Chicago*, 190 N. E. 273).

Slot Machines

Slot machines used in gambling held subject to seizure and destruction, although assessed for taxation (Oregon Supreme Court: *Enloe v. Lawson*, 31 Pac. 2d, 171).

Street Meetings

Ordinance requiring permit to preach religion or expound atheism upheld (New York Court of Appeals: *People v. Smith*, 185 N. E. 745).

Streets

Mere use of lot as passageway to railway station for 20 years held not to create public right by adverse possession (Missouri Supreme Court: *Kelsey v. City of Shrewsbury*, 71 S. W. 2d, 730).

Specific statutory authority held essential to condemnation of street crossing over railroad right-of-way involving reconstruction of railway property, and to requiring company to construct at its own expense underpass for street (Tennessee Supreme Court: *City of Memphis v. Southern Railway Co.*, 67 S. W. 2d, 552).

Improvement of street at natural grade held not abandonment of grade legally established and hence not to entitle abutters to compensation on improvement of street to lawful grade (Rhode Island Supreme Court: *Rousseau v. Fortin*, 172 Atl. 321).

Sunday

Prohbition against sale of vegetables and produce on Sunday upheld (Louisiana Supreme Court: *City of Shreveport v. Harris*, 152 So. 330).

Taxicab Regulation

Ordinance permitting railroad to grant exclusive taxicab privilege on railway station premises upheld (Alabama Court of Appeals: *Wright v. City of Anniston*, 154 So. 597).

Taxpayers' Suits

Suit by taxpayer to recover statutory penalty for fraudulent settlement of city claim by officials held to have abated on his death (Oklahoma Supreme Court: *State v. City of Shawnee*, 31 Pac. 2d, 552).

Traffic Regulations

Ordinance permitting railroad to side of narrow street occupied by street-car track upheld (North Carolina Supreme Court: *State v. Carter*, 172 S. E. 415).

Designation of street as "play street" by police commissioner, with restrictions upon vehicular traffic, upheld (New York Supreme Court, Appellate Division: *Tamburrino v. Sterrick Delivery Corp.*, 271 N. Y. Supp. 765).

Treasurers

City and treasurer's surety held not liable for street assessment proceeds misappropriated by Treasurer to prejudice of suing bondholders (California District Court of Appeal: *Municipal Bond Co. v. City of Riverside*, 32 Pac. 2d, 661).

Trees

Owner of land taken for highway widening held not entitled to award based on esthetic value of trees on strip, where contemplated sidewalk would have necessitated their removal (Louisiana Court of Appeal: *Marbury v. Louisiana Highway Commission*, 153 So. 590).

Water Departments

Municipally owned water company held not liable for private fire loss due to neglect to furnish sufficient water to extinguish fire (Kentucky Court of Appeals: *Yowell v. Lebanon Waterworks Co.*, 71 S. W. 2d, 658).

City held not bound to furnish water service outside limits, except as voluntarily contracting to do so, and may charge higher rates for such service than for intracity service (Georgia Supreme Court: *Collier v. City of Atlanta*, 173 S. E. 853).

City held liable to owner of adjacent property for injury done by water seeping from reservoir (Ohio Supreme Court: *City of Barberton v. Miksch*, 190 N. E. 387).

Workmen's Compensation

Street department employee killed by live wire while driving home held not covered by workmen's compensation act (Louisiana Court of Appeal: *Ford v. City of Alexandria*, 151 So. 777).

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

ZONING and PLANNING NOTES

From Data collected by the Zoning Committee of New York (233 Broadway)

Residence District—What Is a Family?

ILLINOIS.—*Village of Riverside v. Reagan*, 270 Ill. App. 355 (Appellate Court, April 11, 1933).—Ellen Reagan and five daughters were the owners of a large residence, containing about twenty rooms. The house was located in a "single family" residence district. In order that cooking arrangements might be made for two of the young married couples of the family, a kitchen sink and an electric cooking stove were installed in one room on the second floor of the house, and the rear porches of the second and third floors were also enclosed. The village claims that the persons living in the house were not one family but several; and that the changes in the house to enable them all to live in it were therefore illegal.

The Court declares, in this case, that these persons did constitute a single family, the decision reading, in part:

"In the Century Dictionary the word 'family' is defined as: 'The collective body of persons who form *one household* under *one head* and one domestic government, including parents, children, servants, and, as sometimes used, even lodgers or boarders.'

"In Webster's Dictionary the definition is: 'The collective body of persons who live in one house, and *under one head or manager; a household*, including parents, children and servants, and, as the case may be, lodgers or boarders.'

"In the Century Dictionary the word 'household' is defined as: 'An organized family and whatever pertains to it as a whole; a domestic establishment;' and 'a family considered as consisting of all those who share in the privileges and duties of a common dwelling; the family including servants and other permanent inmates.'

"In Webster's Dictionary the definition of 'household' is: 'Those who dwell under the same roof and compose a family.'

"In *Race v. Oldridge*, 90 Ill. 250, 252, after quoting the definition of the word 'family,' as given by Webster and others, it is said:

" 'Thus it is seen that this word has a broad and comprehensive meaning in general use.'

"In *Norwegian Old People's Home Society v. Wilson*, 176 Ill. 94, 99, it is said:

" 'The word "family" is used in various significations, some more restricted, others more extended, the general scope and purview of the statute or of the will having to be considered in each case. It is used to indicate, first, the whole body of persons who form one household, thus including servants; second, the parents with their children, whether they dwell together or not; and, third, the whole group . . . closely related by blood.'

"In view of the above definitions of the word 'family,' and considering the restrictions imposed by Section 4 of the Zoning Ordinance in question, and also considering the facts and circumstances of the present case as disclosed by the evidence, we are of the opinion that the trial court was right in holding that the dwelling house on the premises . . . . was occupied 'by a single family . . . . with Ellen W. Reagan as its head' and that the defendants had not violated, and were not violating, said Section 4 of the Zoning Ordinance. We think that the contention of complainant's counsel, viz., that the word 'family,' as used in said ordinance means 'one or more individuals, *sleeping, cooking and eating* on the premises *as a single housekeeping unit*' is without substantial merit, because it is a too limited meaning, especially as such a meaning is not given in the ordinance to the word and is contrary to its public meaning as defined by lexicographers and as generally understood by the public."

Junk Yards

MICHIGAN.—*Wetzel v. Township Board of Waterford Township*, 255 N. W. 314 (Supreme Court, June 4, 1934).—A statute empowering a township board to license and regulate junk yards for dismantling automobiles is constitutional, and the resolution of a township located in the part of the state devoted largely to the manufacture and sale of automobiles, so regulating them, is proper.

EDITOR'S NOTE.—The regulation by zoning ordinances, and other methods, of all sorts of junk yards is common and its validity seems clear.

Reasonableness

NEW JERSEY.—*Linden Methodist Episcopal Church v. City of Linden*, 173 Atl. 593(Supreme Court, July 13, 1934).—An amendment to a zoning ordinance adding to the business zone one lot surrounded by a residential zone and within 100 feet of a church for the purpose of opening a saloon is void as an unreasonable exercise of municipal power. An attempt to wrench a single small lot from its environment and give it a new rating that disturbs the tenor of the neighborhood should receive the close scrutiny of the courts lest zoning enactments be directed from their true objectives.

EDITOR'S NOTE.—A similar case is *Guaranty Contractors Co. v. Town of Bloomfield*, digested in our September, 1934, Notes.

Filling Station

TEXAS.—*Lombardo v. City of Dallas*, 73 S. W. 2d, 475 (Supreme Court, June 30, 1934).—The general language used in the state zoning enabling act, following closely the so-called Standard Act of the United States Department of Commerce, is broad enough to authorize the city of Dallas to exclude filling stations from residential districts; and such exclusion is a valid exercise of the police power.

In accord, *McEachern v. Town of Highland Park*, 73 S. W. 2d. 487 (Texas Supreme Court, June 30, 1934).

EDITOR'S NOTES.—These cases, in the lower court, were given in our previous Notes, the Lombardo case in June, 1932, and the McEachern case in April, 1931.

Storage of Gasoline

NEW YORK.—*People on the Complaint of Riley v. Rohde*, Magistrates Court of City of New York, reported in *New York Law Journal*, September 19, 1934.—The defendant is engaged in the business of selling gasoline, in his boat, the Sadie R., in the navigable waters of the United States, within the limits of the city of New York. The ordinances of the city require, in such cases, that a permit be obtained from the city. The defendant has no such permit, but has a permit from the United States to do a "coasting trade." The defendant claims that, being in navigable waters in United States jurisdiction, he cannot be required to obtain a permit from the city. The Court holds, however, that the police power of the state, delegated by it to the city, for such purposes as these, extends over navigable waters within the city limits; so that the defendant must obtain the city permit.

EDITOR'S NOTE.—It is most important that the city should have jurisdiction in such cases as these, since otherwise it could not enforce regulations essential to public safety.

Open-Air Garages

The depression has been the occasion, to a greater extent than ever before, of the utilization of vacant land in cities for the parking of automobiles at a small charge; indeed, this has often seemed to be the only available method of obtaining a revenue from it to pay taxes. The spaces which, from the point of view of their owners, were best for such use, were situated in residential or business localities; but the owners of neighboring land and buildings found such a use most objectionable. Usually in zoned cities residential and business districts are more or less strictly zoned against garages, and surrounding property owners claimed, and as a rule have shown in court, that these parking places were in fact only outdoor garages. Our readers will remember the New York cases on this subject, reviewed in these Notes for October, 1934. At this time, therefore, an article on this subject as it has developed in New York City, by Edward M. Bassett, is most timely and will be found in late September issues of the *Brooklyn Daily Eagle*, *The New York Times*, and other papers.

PREVENT SIDEWALL BREAKS *BEFORE THEY START!*

WE TESTED DOZENS OF TRUCK TIRES. ORDINARY CONSTRUCTION BROKE DOWN... NOT ONE TRIPLE PROTECTED SIDEWALL FAILED!
Goodrich Silvertown

TRIPLE PROTECTED TIRES POSITIVELY CHECK 80% OF PREMATURE FAILURES

It's the sidewall that causes the grief with ordinary truck tires. It grabs money from the pockets of truck owners every day. You may be next.

But you *can* avoid unnecessary truck tire failures. Goodrich Silvertowns are triple protected at the sidewall! They handle jobs where other tires fall down. They're built to stand up under the flexing and friction that *causes* blow-outs. Actual road tests have proved that Triple Protection makes tires many times safer from sidewall breaks. You can make a test yourself. And save real money while doing it.

DROP A TON ON A TIRE! That's what happens when you dump a big shovel of stone or dirt in a truck. It's the *tires* that take the shock and carry the load. Is it any wonder that ordinary tires break through the sidewall? Is it any wonder you pay big repair bills, pay for lost time and idle equipment?

You can avoid these delays and extra expense with Goodrich Silvertowns that positively check 80% of premature failures. Put Triple Protected Silvertowns on your trucks. The tougher the job, the more you'll save yourself in time and money by changing over right now.

Give your Goodrich truck tire dealer a chance to prove that he can save you real money. Phone him now.

WHY SIDEWALLS FAIL—The sidewall is the weak spot in most truck tires. Many tires blow out because they do not have these three features. Every Goodrich Silvertown has this protection:

1 PLYFLEX—a *new*, tough, sturdy rubber material with greater resistance to stretch. A layer of Plyflex in the sidewall distributes stresses and strains—prevents ply separation—checks local weakness.

2 PLY-LOCK—the new Goodrich way of *locking* the plies about the bead. Anchoring them in place. Positive protection against the short plies tearing loose above the bead.

3 100% FULL-FLOATING CORD—Each cord is surrounded by rubber. With ordinary cross-woven fabric, when the cords touch each other, they rub—get hot—break. In Silvertowns, there are no cross cords. No friction.

Goodrich *Triple Protected* Silvertowns
FOR TRUCKS AND BUSES

FALSE PROPHET

Sly, glib, smooth-tongued . . . it's not hard for him to persuade you that your old water supply system is good enough.

"See how well it runs?" he argues. "Why spend money for new equipment? What difference does a few years make?"

But years, plus wear, make a great deal of difference. Most water supply systems more than 15 years old, according to recent statistics, waste 25 to 40 per cent of the money it costs to operate them.

That's why progressive municipalities everywhere are replacing old and obsolete systems with new and modern LAYNE Systems.

LAYNE Pumps and Wells are built to deliver the greatest volume of water at the lowest possible cost. They are built to withstand the battering of extra hard service for an extra long time.

Whether its capacity is 50 or 5,000 gallons per minute, each LAYNE unit is backed by the famous LAYNE guarantee, "more water . . . less cost . . . longer life." Send for these interesting, free bulletins that are full of facts it will pay you to know about LAYNE Pumps, Wells and Well Water Systems. Use the coupon.

LAYNE & BOWLER, INC.

Dept. B, General Offices, Memphis, Tennessee

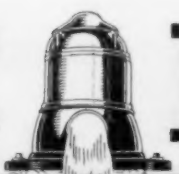
Send me free complete information on LAYNE Pumps, Wells and Well Water Systems.

*Name*_____

*Address*_____

*City*_____ *State*_____

LAYNE PUMPS



AND WELL WATER SYSTEMS

Municipal Finances Continue to Improve

AN excellent market for sound municipal securities is indicated by the low interest rates at which new issues can be floated, as shown by *The Bond Buyer's* figures quoted on page 63 of this issue. Further evidence comes from press releases issued last month by the Reconstruction Finance Corporation and the Public Works Administration. The RFC announcement reports the sale by it of seventeen issues of municipal bonds, with a par value of $3,352,000, at a premium of $105,652; while the PWA announced that nine more allotments of loans and grants awarded for construction of non-Federal projects have been changed, at the request of the recipients, to grants only of 30 per cent of the cost of labor and materials to be used on their projects. The changes were requested because the recipients have been able to sell their bonds in the private investment market and do not need PWA loans. To date a total of 389 such changes have been made, and $42,556,533 has been released for re-allocation to expand the public works program.

PWA Finances Most Construction Contracts

THE Public Works Administration program was the direct cause of 63 per cent of all types of construction contracts let throughout the United States in September, the F. W. Dodge Corporation, nationally recognized construction statisticians, has reported to the PWA.

The September contract total for all classes of construction amounted to $110,219,200 in the 37 states east of the Rocky Mountains, according to the Dodge report. For the elapsed nine months of 1934 the publicly-financed construction awards in the 37 eastern states totaled $762,413,100; this was about 63 per cent of the total of $1,203,952,100 reported during the same period for all classes of construction, both public and private. For the initial nine months of 1933 contracts for construction of all descriptions totaled only $740,791,100, of which amount publicly-financed undertakings accounted for $302,445,100. From these figures it is seen that though total awards for 1934 to date are only somewhat more than 60 per cent greater than in the corresponding period of 1933, the volume of publicly-financed work is running at a rate of 2½ times as great as in the first nine months of 1933.

The Dodge Corporation's established system of construction contract reporting, which has been accepted by the industry for years, regularly covers the 37 states east of the Rocky Mountains. Therefore, it does not take into consideration the large PWA construction program in Pacific Coast states.

Wise Managers Are Improving Their Plants

ROCKVILLE CENTER, N. Y., has year by year been putting its electric service underground in the business district at the rate of $20,000 per year, until 80 per cent of it is underground. Last year it spent $10,000 for conduits and manholes and $4,500 for conductors; the year before, $6,500 for conduits and $4,000 for conductors.

It did not have to do this. As an economy measure it could have done nothing except keep the plant running. But it believed that now was the time to get things in good shape, and that doing this was true economy.

This same town in the last two years took out all its old electric meters, 800 of them, and put in new meters. The value of the new meter is its accuracy to 200 per cent overload and its safety at 400 per cent overload. The old 5-ampere meter was very inaccurate with a load of 8 amperes. The new meter is accurate with 15 amperes and safe with 25 amperes.

What has been done and is being done at Rockville Center is suggestive of what ought to be done, and what in many cases probably is being done, in other cities served by municipal power. This has been and is the ideal time for improving and rehabilitating the system. The value of so doing lies not only in the improvement, with better service and a resulting increase in good-will, but also in continued employment of the entire personnel. Another strong factor favoring this work and justifying it from the taxpayers' point of view, is the fact that prices are low and real economies will be gained. Municipal electric plants are in a better position to rehabilitate than almost any other town service; because, having a revenue and frequently a profit, they have money to spend.

Important CCC Project in New Jersey

CHARLES P. WILBER, State Forester in charge of Camp 3 of the Civilian Conservation Corps near Springfield, N. J., reports that the Union County Park Commission is receiving many letters of commendation on the work of the Corps, especially as it relates to channel clearing and flood control on the winding Rahway River. Residents of Springfield, Scotch Plains, Summit and Union are interested in the six-months program just started, for, in addition to the work of making a 3,000-acre section of the park system accessible, a public camp ground water-supply system is to be constructed for the use of thousands of visitors who come weekly to enjoy the Lake Surprise area.

National Municipal League Holds Fortieth Annual Convention This Month

CIVIC leaders, public officials, and authorities on government from all parts of the country will gather in Pittsburgh for the fortieth annual conference of the National Municipal League, on November 26 and 27.

The two-day program is crowded with luncheons, dinners, panels, and round-table meetings. The business meeting of the League takes place after luncheon, Monday, at which Joseph D. McGoldrick, Comptroller of New York City, and Richard S. Childs, President of the City Club of New York, will speak on "New York's Revolt." President Harold W. Dodds of Princeton will address the banquet Monday evening on "The Future of Municipal Government." On Tuesday the problem of "A Greater City" will be discussed by Clarence A. Dykstra, City Manager of Cincinnati, and Thomas H. Reed, Director of the Municipal Consultant Service.

Two panels are planned for Monday. In the morning Louis Brownlow, Director of the Public Administration Clearing House, will lead a discussion on "Improved Administrative Technique," and in the afternoon Philip A. Benson, President of the Dime Savings Bank of Brooklyn, on "The Problems of Municipal Finance." On Tuesday morning Prof. James K. Pollock of the University of Michigan will preside at a meeting on "Honest Elections," and in the afternoon Henry M. Waite, former Deputy Public Works Administrator, on "Federal Aid to Cities." Tuesday evening the annual meeting of the Proportional Representation League, of which Prof. A. R. Hatton of Northwestern University is President, will take place.

In addition there will be seven round-table meetings, on Monday afternoon and Tuesday morning. W. C. Lovett, Director of the Citizens' League of Detroit, will be Chairman of one on "Citizen Action"; Arnold Frye, leading municipal attorney, on "Model Tax Collection Law"; Prof. Arthur W. Bromage of the University of Michigan, on "County Government"; R. C. Atkinson, Chairman of the Governor's Commission on County Government in Ohio, on "Metropolitan Problems"; Ernest J. Bohn, President of the National Association of Housing Officials, on "Housing and Slum Clearance"; Ralph Munn, Director of the Carnegie Library of Pittsburgh, on "Libraries"; and Donald C. Stone, Director of the Consulting and Research Division of the Public Administration Service, on "Police."

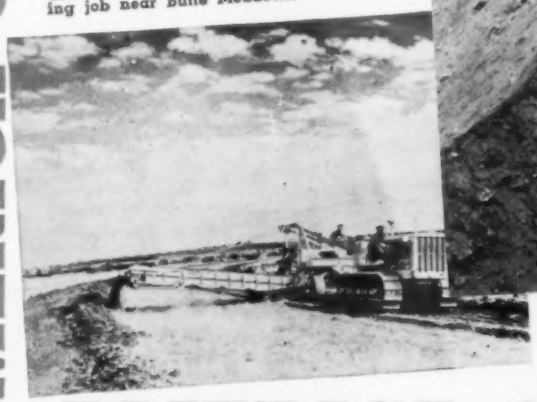
The meetings, in the William Penn Hotel, will be open to the public. There will be no registration fee. Special railroad rates are offered.

AMERICA GOES DIESEL

·AMERICA·GOES DIESEL·

▼This is one of three "Caterpillar" Diesel Seventy-Five Tractors on Mr. R. Roland's contract at Coulee Dam. Working 20 hours per day. Moving 11 to 12 yards per trip. Fuel cost is only about 30 cents per hour.

▲This bulldozer-equipped "Caterpillar" Diesel Seventy-Five Tractor supplies low-cost, dependable power to Contractor Clarence Young for a mountain road building job near Butte Meadows, California.



◀Pulling a "Caterpillar" Elevating Grader, this "Caterpillar" Diesel Fifty Tractor is doing canal construction work for the Irrigation Department of the Union of South Africa.

·AMERICA GOES DIESEL·

AMERICA GOES DIESEL

"SO WE INCREASED OUR FLEET OF 'CATERPILLAR' DIESEL TRACTORS"

—SAYS H. W. McKINLEY, GLENDALE, CALIFORNIA, CONTRACTOR, AFTER HIS COST RECORDS SHOWED THAT THREE BIG "CATERPILLAR" DIESEL TRACTORS WERE COSTING LITTLE MORE FOR FUEL THAN ONE 30-HORSEPOWER GAS TRACTOR.

Another southern California contractor, Clarence Crow, of Crow Brothers, writes: "Our fuel cost for each of our 'Caterpillar' Diesel Seventy-Five Tractors is only one-fifth of what it used to be for our big gas tractors."

Other owners, everywhere, report similar results. Says E. B. Boyle, President of the Boyle Road and Bridge Company of Sumter, S. C.: "Fuel for the 'Caterpillar' Diesel costs us less than 1/3 the cost of fuel for a gas machine of the same size." From Pickering, Mo., Mr. L. O. Killion writes: "Ten to twelve gallons of fuel is driving the Diesel Thirty-Five the same number of hours that 25 gallons of gasoline did the gas 30-h. p. tractor, besides doing one-half more work."

More work—less cost—such are the results reported by the thousands of enthusiastic owners of "Caterpillar" Diesel Tractors and Power Units. That explains why more and more users of tractors and stationary power are going Diesel—with "Caterpillar." Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

Why not remember to mention THE AMERICAN CITY?

Water Rates and Service Charges, Installation Charges, Hydrant Rentals and Sprinkler Costs—VII

Abstracts of Water Department and Company Reports

Newark, Ohio

Population	32,000
" " served	32,000
Number of services	8,500
" " meters	8,500
" " hydrants	769
Miles of water main	90

The following water rates are charged within the corporate limits of the city of Newark, Ohio:

First	10,000 cu. ft. in one quarter		21c per 100 cu. ft.
Next	90,000 " " " "		16c " " " "
"	400,000 " " " "		11c " " " "
"	500,000 " " " "		8c " " " "
"	1,000,000 " " " "		5c " " " "
"	4,000,000 " " " "		2c " " " "
"	6,000,000 " " " "		1.16c " " " "
All over 12,000,000 cu. ft., or 90,000,000 gals., consumed in one quarter per 100 cu. ft.			@ .02½c

The minimum rate is $2.10 in one quarter, or 70c per calendar month or any part of a calendar month over 5 days.

For all water drawn from a metered service the minimum charge is $2.10 per quarter, or 70c per calendar month or any part of the calendar month over 5 days, whether the corresponding amount of water is used or not, as long as the water is turned on at the stop box. All consumers outside the city limits are charged 10% in addition to the regular city rate, except where the consumption of a single consumer exceeds 75,000 cu. ft. per quarter, in which event the 10% additional charge is not made. This rate also applies where water is purchased for resale.

Upon application by the owner of a premises or his duly authorized agent and payment in advance for water meter, the Water-Works Department makes the tap and installs the service line to the curb. There is no charge for the standard service (¾") inside the city. The charge for a service larger than ¾" includes a time charge and material costs plus 10%. Service connections outside the city are charged as follows:

¾" tap	$17.50
1" "	25.00
1½" "	40.00
2" "	50.00

Taps larger than 2" are charged at cost plus 10%.

These prices do not include the excavation of paved streets or roadways, nor the extending of water lines under roadways or the laying of water lines more than 20 ft. in length. An additional charge is made for any of these extra items.

Connections for fire protection are permitted when special application is made, and include a service extended from a water main to approximately 1 ft. back of the curb line of the street supplying water to a line of pipe and laterals to which are connected fire hydrants, hand hose connections, tanks, reservoirs, automatic sprinkler systems or other equipment used exclusively for extinguishing fires. The consumer is required to install a meter or a consumption detector of a style and type approved by the Division of Water.

There is no charge for fire hydrants used by the city.

GUY W. LAWYER,
Director, Department of Public Service.

Niles, Mich.

Population	11,300
" served	12,000
Number of services	2,600
" " meters	2,900
" " hydrants	354
Miles of water main	38

There are schedules for water service in Niles and for customers outside the city limits, and also a meter rental.

SCHEDULE OF RATES WITHIN THE CITY

First	700 cu. ft. or less		$1.67
Next	6,000 " "	@	12c per 100 cu. ft.
	5,000 " "	@	8c " " " "
"	8,300 " "	@	6c " " " "
All in excess of 20,000 cu. ft.		@	4½c " " " "

Discount 10%.

In addition to the above metered rates, an annual service charge is made, as follows:

⅝" meter	service charge	$2.00 per year, or	$ .50 per quarter
¾" "	" "	3.00 " " "	.75 " "
1" "	" "	5.00 " " "	1.25 " "

This department does not furnish meters larger than 4".

RATES FOR CONSUMERS OUTSIDE CITY LIMITS

First 700 cu. ft. or less	$2.50
All in excess of 700 cu. ft. at	20c per 100 cu. ft.

METER RENTAL SERVICE CHARGE

⅝" meter	$3.00 per year or	75c per quarter	
¾" "	4.00 " " "	$1.00 " "	
1" "	6.00 " " "	1.50 " "	

No discount; penalty of 10% of gross bill to be added to delinquent accounts.

Repairs on meters larger than 4" are charged to the consumer at cost plus 10%. Failure to receive water bills does not entitle the customer to the discount.

All ⅝" service taps are charged at $20.00, any larger taps being billed at cost plus 10%. There is no charge for fire hydrants either public or private.

E. F. CRABILL,
Superintendent, Water and Light Plant.

Willimantic, Conn.

Population	13,000
" served	13,000
Number of services	2,120
" " meters	1,917
" " hydrants	304
Miles of water main	15

The meter rates, for which bills are rendered quarterly on January 1, April 1, July 1 and October 1, are as follows:

10 to	800 cu. ft.		$ 2.00
800 "	2,590 " "	25c per 100 cu. ft.	
2,590 "	2,700 " "	inclusive	6.48
2,700 "	3,830 " "	24c per 100 cu. ft.	
3,830 "	3,990 " "	inclusive	9.19
4,000 "	5,640 " "	23c per 100 cu. ft.	
5,640 "	5,890 " "	inclusive	12.97
5,900 "	8,400 " "	22c per 100 cu. ft.	
8,400 "	8,800 " "	inclusive	18.48
8,800 "	12,370 " "	21c per 100 cu. ft.	
12,370 "	12,990 " "	inclusive	25.98
13,000 "	18,040 " "	20c per 100 cu. ft.	
18,040 "	19,000 " "	inclusive	36.10
19,000 "	28,600 " "	19c per 100 cu. ft.	
28,600 "	42,000 " "	18c " " " "	
42,000 "	62,000 " "	17c " " " "	
62,000 "	92,000 " "	16c " " " "	
92,000 "	136,000 " "	15c " " " "	
136,000 "	201,600 " "	14c " " " "	
201,600 "	298,400 " "	13c " " " "	
298,400 "	460,000 " "	12c " " " "	
460,000 "	640,000 " "	11c " " " "	

Applications for water service are made at the City Clerk's office and signed by the owner of the premises to be supplied or his duly authorized agent. The Water Department furnishes and lays the service pipe from the street main to the curb line.

There is no charge for fire hydrants or private fire service or sprinkling service other than the actual charge for installing the sprinkling service or hydrant.

H. S. MOULTON,
Superintendent, Willimantic Water Department.

This series of concise water rate reports started in the May issue of The American City. The Municipal Index for 1934-35 will carry 61 additional reports.

ROLLING THE SNOW AWAY!

Snow moving becomes an entirely new operation with the announcement of the Western Series 1½ Snow Plow. An amazing blade improvement completely transforms plowing from the old *pushing* action (with its heavy demands on power) to a rolling motion—easy, speedy, and more efficient.

Before snow flies you will want to know and understand this improvement which will this winter save so much time and money—and prove so much easier on your equipment. Send for full details on the Western Series 1½ Snow Plows. All are made for quick attachment to trucks of 1½-ton or greater capacity, except those specially adapted to the Cletrac "35" Tractors. Hydraulic lift is available on several types, eliminating operating arms over the engine hood. Efficient 6' and 8' blades for simple application on Cletrac "20" Tractors provide an effective Sidewalk Plow.

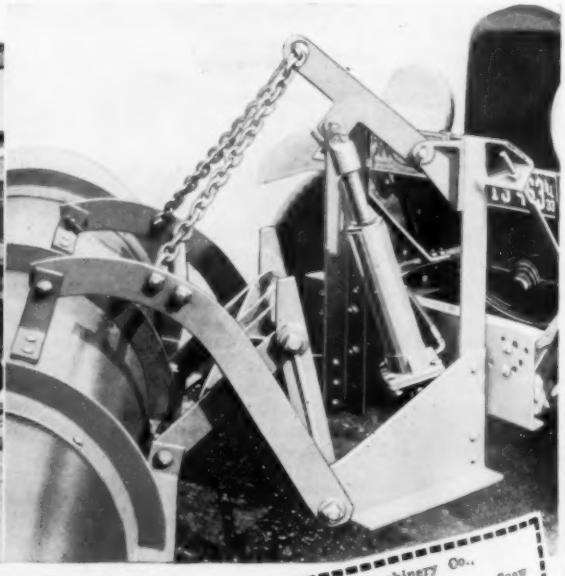
Send the coupon for the new and interesting details on the Western complete line of Snow Plows.

NEW EASE AND SPEED OF OPERATION

Rolling instead of shoving snow means less power for the same result. Getting the bit under is the first step. Next, the pronounced curvature of the blade carries snow up and over on itself—and because of the widening out of the blade to the right, a screw motion is developed rolling snow to the side of the road—without blowing back into the radiator or windshield.

To advance the bit, as this new design does, in an almost horizontal position, required a new tripping mechanism to avoid damage in striking solid obstructions. This is provided by a toggle support which "breaks" when struck by a heavy, sharp blow.

THE AUSTIN-WESTERN ROAD MACHINERY CO.
Home Office: Aurora, Illinois. Cable Address: AWCO, Aurora
Branches in Principal Cities



Note the high point of suspension on this blade. On striking manhole covers or traffic markers the bottom of the blade swings back and rides over, by the toggle release shown at the right.

Austin-Western

ROAD ROLLERS, CRUSHING & SCREENING PLANTS, SCARIFIERS, SWEEPERS & SPRINKLERS, ROAD GRADERS, ELEVATING GRADERS, MOTOR GRADERS, DRAGS, SHOV... WAGONS, SNOW PLOWS.

The Austin-Western Road Machinery Co., A-4, Aurora, Illinois
Gentlemen: Please send details on Western Snow Plows, including the new Series 1½.
Name .....
Firm .....
Address ..... State .....
City ....OUS DISTRIBUTORS

Quincy, Ill.

Population	39,000
" served	39,000
Number of services	9,324
" " meters	8,126
" " hydrants	646
Miles of water main	106.88

The quarterly meter rates are as follows:

Winter Rates

First	12,000 gals. per quarter	$ .315	$ .285
Next	63,000 " " "	.25	.225
"	75,000 " " "	.20	.18
"	450,000 " " "	.15	.135
"	900,000 " " "	.12	.11
Over	1,500,000 " " "	.06	.055

First 10,000 gals. used per quarter, 50c per 1,000 gals., less discount, equals 45c
Second 10,000 gals. used per quarter, 40c per 1,000 gals., less discount, equals 36c
Third 10,000 gals. used per quarter, 30c per 1,000 gals., less discount, equals 27c
Next 70,000 gals. used per quarter, 25c per 1,000 gals., less discount, equals 22.5c
Next 100,000 gals. used per quarter, 20c per 1,000 gals., less discount, equals 18c
All in excess of 200,000 gals. per quarter, 16c per 1,000 gals., less discount, equals 14.4c
One consumer uses 4,000,000 gals. per month, paying 8c per 1,000 gals. net
One consumer uses 10,000,000 gals. per month, paying 5c per 1,000 gals. net

The annual minimum rate for water is $10.00. All consumers who pay $25.00 or more per quarter gross for water at regular meter rates are allowed the following discount from the charges for automatic sprinklers and private fire hydrants:

From $25.00 to $49.99 inclusive, gross	10%
" 50.00 " 74.99 " "	15 "
" 75.00 " 99.99 " "	20 "
" 100.00 " 124.99 " "	25 "
" 125.00 " 149.99 " "	30 "
" 150.00 " 174.99 " "	35 "
" 175.00 " 199.99 " "	40 "
" 200.00 " 224.99 " "	45 "
" 225.00 " 249.99 " "	50 "
" 250.00 " 274.99 " "	55 "
All over $275.00 per quarter	60 "

Private fire hydrants are billed at $30.00 per year each, and sprinkler heads at 10c each per year.

There is no revenue from public fire hydrants. Hospitals, parks, and cemeteries have free water. Public and parochial schools pay 5c net per 1,000 gals.

The City Water Department lays the mains and services to the curb and owns the meters.

W. R. Gelston,
Superintendent, Water Department.

Whiting, Ind.

Population	10,755
" served	10,755
Number of services	2,155
" " meters	59
" " hydrants	120
Miles of water main	16.2

All metered services have a quarterly minimum charge as follows:

⅝" meter	Gross $ 3.75	Net $ 3.30
¾" "	" 6.00	" 5.40
1" "	" 10.50	" 9.45
1½" "	" 15.00	" 13.50
2" "	" 24.00	" 21.60
3" "	" 45.00	" 40.50
4" "	" 72.00	" 67.80
6" "	" 120.00	" 108.00

The net rates are charged if bills are paid by the 15th of the month following the quarter in which service is rendered, otherwise the gross rates are charged.

The meter rates applying to both domestic and industrial services are divided into summer rates and winter rates, as given below:

Summer Rates

		Per 1,000 Gallons Gross	Net
First	12,000 gals. per quarter	$ .315	$ .285
Next	30,000 " " "	.15	.135
"	33,000 " " "	.25	.225
"	75,000 " " "	.20	.18
"	450,000 " " "	.15	.135
"	900,000 " " "	.12	.11
Over	1,500,000 " " "	.06	.055

When application is received for water service, the Water Department furnishes and installs at its own expense a meter box, a meter and the service connection from the mains to the curb or property.

All water used in public parks, in fountains, for flushing or washing streets, for street sprinkling, is paid for by the city at meter rates and under the minimum charges as given above. The city pays $25.00 per year, payable semi-annually, for each hydrant.

J. F. Bartuska,
Superintendent, Water Department.

Burbank, Calif.

Population	16,500
" served	16,500
Number of services	4,768
" " meters	4,768
" " hydrants	824
Miles of water main	163

The following rates and minimum monthly charges have been established:

Meter Rates

First	1,200 cu. ft. used in any one month	13c per 100 cu. ft.
Next	3,800 " " " " " "	11c " " " "
"	5,000 " " " " " "	10c " " " "
"	40,000 " " " " " "	9c " " " "
"	50,000 " " " " " "	8c " " " "
"	100,000 " " " " " "	7c " " " "
All in excess of 200,000 cu. ft. used in any one month		6c " " " "

Minimum Monthly Rates

¾" meter	$1.00 per month
1" "	1.25 " "
1½" "	1.50 " "
2" "	2.00 " "
3" "	3.00 " "
4" "	4.00 " "
6" "	6.00 " "
8" "	8.00 " "

The following charges are made for water connections and are assessed and must be paid before any connections are made:

¾" meter	$18.00
1" "	26.00
1½" "	57.00
2" "	79.00

All services and water meters are installed by the Department and remain its property, and are maintained, repaired and renewed by the Department when rendered unserviceable for reasonable use.

Fire hydrants are placed, maintained and repaired by the Department at cost plus 10%. The cost is paid out of the general fund of the city or such other fund provided for that purpose, and paid into the fund of the Public Service Department of the city of Burbank.

For private fire protection a charge is made of cost plus 10%, this charge including the cost of a proportional meter. Such services must be used only in case of fire. If this regulation is violated, the Department is authorized to collect the sum of $25.00 for each such use and to enforce this provision by discontinuing all water service to the property until such fine is paid.

J. H. McCambridge,
General Superintendent.

St. Cloud, Minn.

Population	21,000
" served	16,000
Number of services	3,500
" " meters	3,500
" " hydrants	494
Miles of water main	54

There are two water-rate schedules, the second being for large industrial services.

Schedule No. 1

	Gross Rate per 100 Cu. Ft.	Net Rate per 100 Cu. Ft.
First 4,000 cu. ft.	22c	20c
Next 40,000 " "	16½c	15c
Over 44,000 " "	11c	10c

Schedule No. 2

From	250,000 to 750,000	10½c	10c
"	750,000 to 3,000,000	9½c	9c
"	3,000,000 to 6,000,000	8½c	8c
Over	6,000,000	6½c	6c

Schedule No. 2 applies only to services using an average within the class rate for a full year. Each bill issued shows the gross and net amounts, and all bills paid by the 20th of the month immediately following the end of the term for which the bills are rendered may be paid for the net amount. All other bills must be paid at the gross figure.

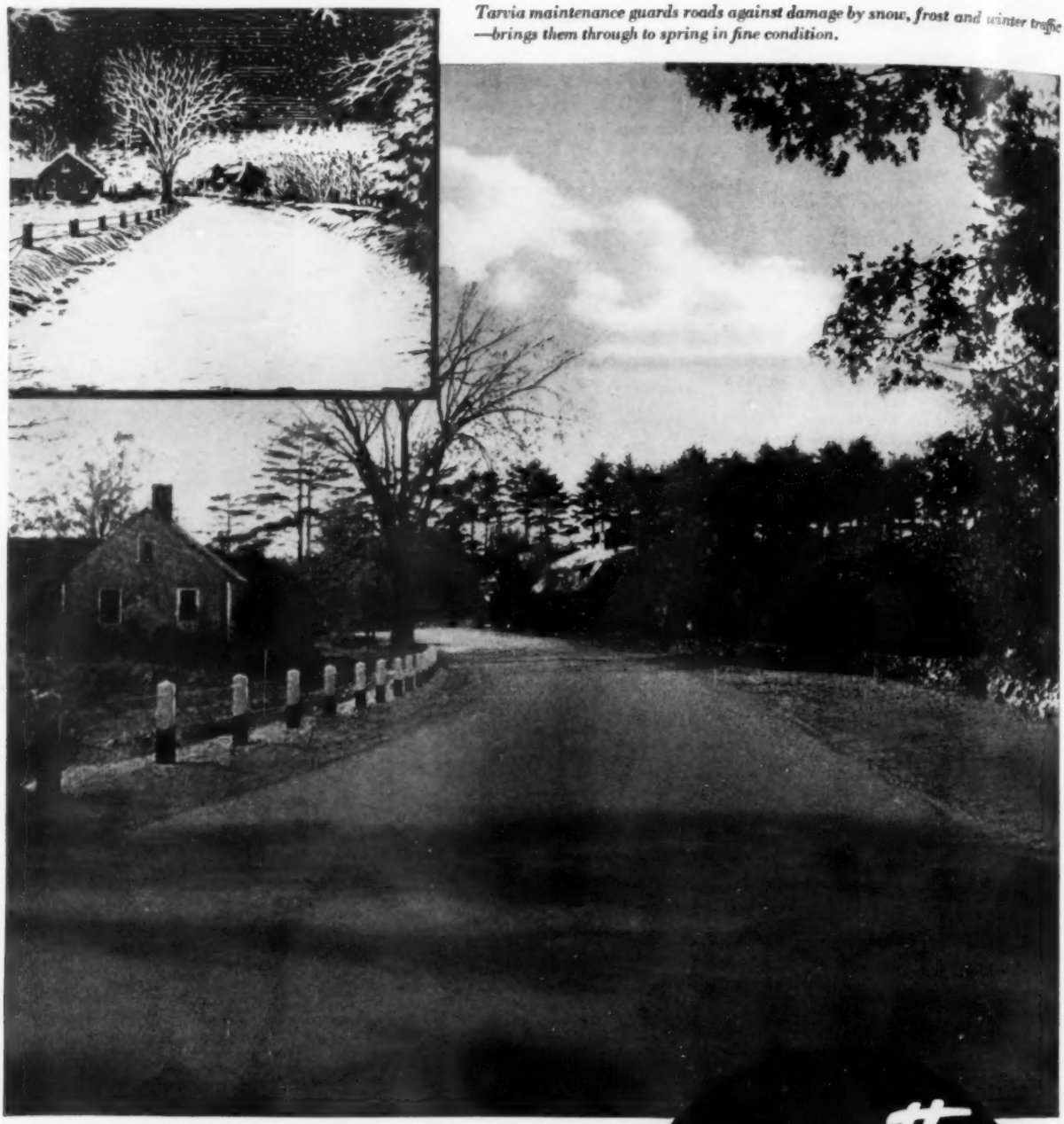
Under the above rates each meter must furnish the following minimum quarterly bill:

⅝"	$ 1.00
¾"	2.00
1"	3.00
1½"	10.00
2"	15.00
3"	35.00
4"	60.00
6"	100.00

No service is turned on for less than a quarterly period of three months with the minimum charge according to the above schedule.

All service connections and meters are furnished by the Water Department but must be paid for by the consumer at the time application for service is made. All openings and connections in the streets are made by the Water Department, which carries the pipes to a point just within the curb line and there installs a standard curb cock. In determining the charge for the service pipe, the cost of construction is figured from the center of the street. All construction within the curb line must be done by a duly licensed plumber under the direction of the City Plumbing Inspector.

R. E. Borrowman,
Superintendent, City Water Works.



Tarvia maintenance guards roads against damage by snow, frost and winter traffic —brings them through to spring in fine condition.

● With only a few weeks left before freezing weather begins its damaging effect on defective road surfaces, there is still time to take advantage of the availability of Tarvia and Barrett Service to complete your program. Whether you have a new road to build an old one to surface or widen, or patching to be done, there is a fast and economical way to do it with Tarvia. Tarvia construction and maintenance *now* costs less in the long run, and saves expensive repair bills next spring. Let the Tarvia man work with you. 'Phone, wire or write our nearest office.

Barrett

Tarvia

GOOD ROADS AT LOW COST

THE BARRETT COMPANY

New York Chicago Philadelphia Cleveland Birmingham St. Louis Boston Minneapolis
Toledo Milwaukee Detroit Baltimore Columbus Youngstown Lebanon Buffalo Providence Syracuse Hartford Cincinnati
Bethlehem Rochester Portland, Me. In Canada: THE BARRETT COMPANY, LTD. Montreal Toronto Winnipeg Vancouver

When you write for that catalog, kindly mention THE AMERICAN CITY

Fostoria, Ohio

Population	12,000
" served	10,800
Number of services	3,260
" " meters	3,100
" " hydrants	237
Miles of water main	29

The minimum charge for water in Fostoria is $1.00 per month, which permits a consumption of 100 cu. ft. or less. For a consumption in excess of 100 cu. ft. the following rates apply in addition to the minimum charge:

From	100	cu. ft.	to	1,000	cu. ft.	$2.00	per	1,000	cu. ft.
"	1,000	"	"	4,000	"	1.87	"	"	"
"	4,000	"	"	9,000	"	1.75	"	"	"
"	9,000	"	"	15,000	"	1.62	"	"	"
"	15,000	"	"	22,000	"	1.50	"	"	"
"	22,000	"	"	30,000	"	1.37	"	"	"
"	30,000	"	"	39,000	"	1.25	"	"	"
"	39,000	"	"	49,000	"	1.12	"	"	"
"	49,000	"	"	60,000	"	1.00	"	"	"
"	60,000	"	"	75,000	"	.87	"	"	"
"	75,000	"	"	and over		.75	"	"	"

All bills are payable up to and including the 10th of the month immediately following the month in which the meter is read. All bills not so paid carry a 5% penalty.

J. WM. LORD,
Superintendent, Fostoria Water Works.

Mason City, Iowa

Population	23,304
" served	23,000
Number of services	5,070
" meters	5,070
" " hydrants	386
Miles of water main	67.5

Water bills are rendered quarterly, with a minimum rate of $1.50 per quarter, which permits use of 3,000 gals. For water used each quarter in excess of 3,000 gals., the consumer pays the following rates:

Not exceeding	15,000	gals.				50c	per	1,000	gals.
Over	15,000	gals.	and not exceeding		25,000 gals.	45c	"	"	"
"	25,000	"	"	"	35,000 "	40c	"	"	"
"	35,000	"	"	"	50,000 "	30c	"	"	"
"	50,000	"	"	"	100,000 "	25c	"	"	"
"	100,000	"	"	"	700,000 "	20c	"	"	"
"	700,000	"				15c	"	"	"
"	2,000,000	"				10c	"	"	"

Upon application, the Water Department will install the service line from the curb to the meter box at the cost of the property owner. All service connections are copper, or lead to the curb box and galvanized iron to the meter. Curb service boxes are located 1 ft. outside the sidewalk line, with the top level with the top of the established sidewalk grade, or 1 ft. inside the established curb where the walk extends to the curb. Service lines are laid at least 6 ft. below the established grade.

There is no charge for city fire hydrant or for private hydrants. Sprinkler systems may be attached to the city main by direct connection without meters, but no open connection can be incorporated in the system, and no valves except one main control valve at the entrance to the building, which must be sealed open. No charge is made for water used for fire services, but a yearly charge of $5.00 per system is made to cover the cost of inspection.

E. H. CROFOOT,
City Manager.

Billings, Mont.

Population	17,042
" served	18,815
Number of services	4,058 in use
	570 curbs
" " meters	4,161
" " hydrants	267
Miles of water main	54.1

All water meters are owned by the city and are furnished to consumers and set in place when proper receptacles are provided for them. The following minimum meter charges and rates are now in force:

Size of Meter	Minimum Monthly Charge
⅝"	$1.00
¾"	1.50
1"	2.00
1½"	5.00
2"	10.00
3"	15.00
4"	20.00
6"	30.00

METER RATES

First	1,000	cu. ft.	7,480	gals.	per	100	cu. ft.		.25
Next	1,000	" "	7,480	"	"	"	"	"	.15
"	48,000	" "	359,066	"	"	"	"	"	.10
"	50,000	" "	374,026	"	"	"	"	"	.08
"	100,000	" "	748,052	"	"	"	"	"	.06
All over	200,000	cu. ft.	per	100	cu. ft.				.05

Upon receipt of application for water services the Department, at its own expense, taps the mains and furnishes a corporation cock and other material used, and labor for making the taps, but the consumer is required to bear the expense of laying and maintaining the service pipe from the main to his premises, including the installation of an approved curb cock with a cast iron curb box.

Fire hydrants are furnished for the use of the city at $1.00 each, and private hydrants for manufacturing plants at $2.50 each, per month.

Private fire protection services are furnished at the rate of $1.66-2/3 for 2" services, and $2.08-1/3 for 3" services per month. The charge for standpipe and automatic sprinklers per month is $1.66-2/3 for 2" pipe, $2.50 for 4" pipe, and $3.33-1/3 for 6" pipe.

A. L. HEWETT,
Superintendent, City Water Department.

Joliet, Ill.

Population	42,993
" served	43,793
Number of services	11,000
" " meters	9,166
" " hydrants	651
Miles of water main	73.0

Water meters are read quarterly, the times varying in different sections of the city in order to equalize the work. The rates start with a minimum charge of $3.00 per quarter within the city, and a charge of $6.00 per quarter outside of the city. Then the following usage charge is made:

		Inside	Outside
First	10,000 cu. ft. @	$ .50	$1.00 per 100 cu. ft.
Next	40,000 " " @	.40	.80 " " " "
"	25,000 " " @	.30	.60 " " " "
Over	75,000 " " @	.25	.50 " " " "

A discount of 10% is allowed upon all bills paid within the first 15 days after they are rendered, provided that the charge shall never be lower than the minimum charge of $3.00 or $6.00.

All taps are made by the Department of Public Property. The charge is $5.00 for the first tap and $2.50 for each additional tap.

PRICES FOR TAPPING CITY MAINS

1" tap	$ 5.00
1¼" "	7.50
1½" "	10.00
2" "	12.50
6" "	15.00

Application for water connections, tapping and excavation must be made prior to connection with any premises. Any person, firm or corporation excavating the streets is required to deposit a bond or security to the amount of $10,000 to indemnify the city for any damage.

Water meters are furnished by the property owner and are maintained by the city at the consumer's expense. Service connections from the main to the house are of extra-heavy 1" lead pipe or seamless cold-drawn copper tubing.

No charge is made for public or private fire hydrants or for private sprinkler systems for fire protection.

MARTIN J. WHALEN,
Commissioner of Public Property.

Muscatine, Iowa

Population	17,000
" served	16,150
Number of services	5,175
" meters	3,200
" " hydrants	550
Miles of water main	57.0

There are no service charges in the rates for the Muscatine City water works, the meter rates being as follows:

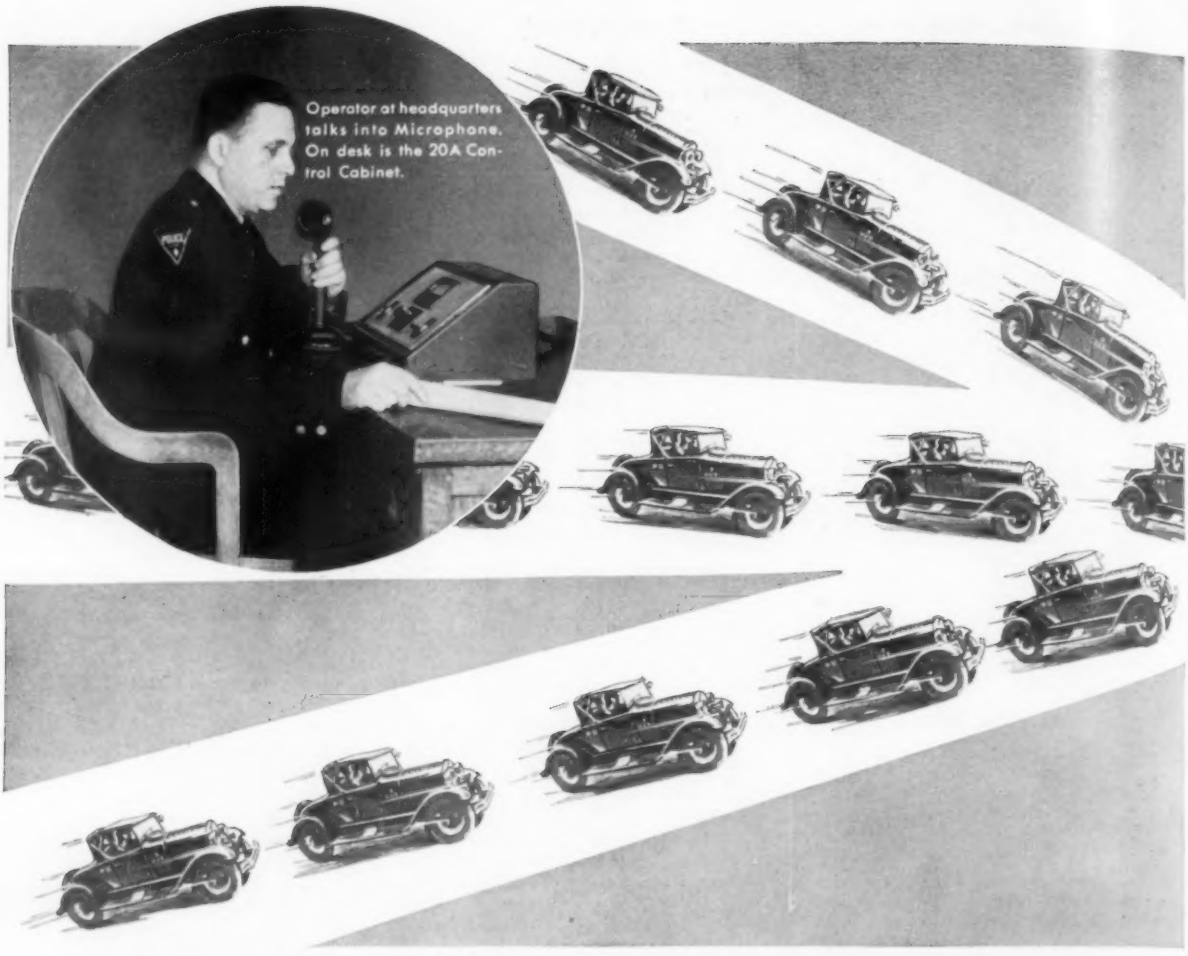
First	1,400	cu. ft.				25c	per	100	cu. ft.
Next	1,300	" "				19c	"	"	"
"	10,600	" "				7c	"	"	"
	53,400	" "				6c	"	"	"
Over	66,700	" "				5c	"	"	"

The minimum rate is 50c per month, and a 10% discount is allowed on the bill if paid on or before the 10th of the month in which the account becomes due.

There is no charge for hydrant service, either private or public, nor is there a sprinkler charge, but the property owner must pay the installation cost.

WILLIAM MOLIS,
Superintendent, Muscatine City Water Works.

Thanks for your cooperation in furnishing the data and checking the proof. More reports are in the process of writing.



SHORT WAVES vs. CRIME WAVES

Police of fifty-one cities are now using Western Electric short wave radio telephone to speed the war against crime. Whatever the size of *your* city, there's Western Electric apparatus—ranging in power from 50 to 5000 watts—to meet your needs.

The 100 watt equipment illustrated is designed to Federal Radio Commission specifications for use in cities of 100,000-200,000 population. It may be operated at *less than 100 watts* in smaller cities.

This equipment assures dependable performance at minimum cost for operation and maintenance. Monitoring permits the operator to hear station output exactly as received by patrol cars. Outstanding features are: remote control—new type crystal with assured frequency stability—100% modulation—operates instantly from "stand by" position—includes facilities for "attention" tone—provides utmost protection for personnel.

For details, write to the distributors of Western Electric Police Radio: Graybar Electric, Graybar Building, New York—or telephone Graybar's nearest branch.

15A Transmitter. Self-contained AC operated power supply. Requires 16" x 28" floor space.

Western Electric

POLICE RADIO TELEPHONE EQUIPMENT

Distributed by* GRAYBAR *Electric Company. In Canada: Northern Electric Co., Ltd.

Kalamazoo, Mich.

Population	56,676
" served	56,676
Number of services	12,812
" " meters	12,812
" " hydrants	1,080
Miles of water main	135.98

The water rates consist of a water charge plus a demand charge, as follows:

METER RATES

Schedule A			
First	10,000 cu. ft. per quarter	$ .10	per 100
Over	10,000 " " "	.07½	" "
Schedule B			
First	10,000 " " "	.10	" "
Next	90,000 " " "	.07½	" "
Over	100,000 " " "	.05	" "
Schedule C			
First	1,000 " " "	.10	" "
Over	1,000 " " "	.30	" "

A discount of 1c per 100 cu. ft. is allowed on all bills paid on or before the due date, which is nominally 15 days from the date of the bill.

SERVICE OR DEMAND CHARGE

Meter Size	Quarterly Charge
⅝"	$ .50*
¾"	.80
1"	1.25
1½"	2.00
2"	3.50
3"	6.00
4"	11.00
6"	20.00
4" fire sprinkler	40.00
6" " "	7.00
8" " "	8.50
	11.00

* Old accounts only.

Schedule A applies to all general residential and commercial customers, Schedule B to customers who use water at a nearly continuous rate during the 24 hours of the day or who do not use water at a rate in excess of the average rate per minute for the previous quarter during the hours of 5 P.M. to 9 P.M. during the months of June to September inclusive, and in no case does Schedule B apply to meters where water for lawn or garden sprinkling is used during those hours; Schedule C applies to all meters measuring water to fire protection sprinkler systems. All water used outside the corporate limits of the city of Kalamazoo is charged double the regular charges of Schedule A, and on Schedules B and C 1½ times the rates given above.

Service connections are installed by the Water Department from the water main to the meter at the customer's expense. The charges for the smaller service connections are:

¾"	$13.50	plus 50c per ft. from center of street to meter
1¼"	16.60	" 60c " " " " " "
2"	35.70	" 70c " " " " " "

The charge for connections larger than 2" in diameter is based on the actual field cost of materials and labor without profit or overhead. The Water Department maintains all service connections from the water main to the water meter without expense to the customer, regardless of whether these connections were installed by the city or by others.

Rental for fire hydrants used by the city is $35.00 per hydrant per year, which is paid from the general city fund. Sprinklers are covered in the demand charge schedule above.

EARL E. NORMAN,
Director, Department of Public Utilities.

Bessemer, Ala.

Population	20,000
" served	40,000
Number of services	7,550
" " meters	7,532
" " hydrants (municipal)	161*
Miles of water main	156

* 32 (private).

The water rates which have been in effect since July 1, 1926, are as follows:

METER RATES

First	75,000 gals. per quarter	(25,000 gals. per mo.)	27½c per 1,000 gals.
Next	75,000 " " "	(25,000 " " ")	25c " " "
"	300,000 " " "	(100,000 " " ")	20c " " "
"	450,000 " " "	(150,000 " " ")	15c " " "
"	450,000 " " "	(150,000 " " ")	10c " " "
Over	1,350,000 " " "	(450,000 " " ")	8c " " "

QUARTERLY MINIMUM CHARGES
(For consumers who are, or could be, served through ⅝" meter)

House with	1 Fixture	2 Fixtures	3 Fixtures	4 or More Fixtures
3 rooms	$2.00	$3.25	$4.25	$4.50
4 "	2.40	3.60	4.50	4.50
5 "	2.75	4.00	4.50	4.50
6 "	3.10	4.50	4.50	4.50
7 "	3.50	4.50	4.50	4.50
8 "	3.85	4.50	4.50	4.50
9 "	4.25	4.50	4.50	4.50
10 "	4.50	4.50	4.50	4.50

¾" meter	$ 1.50	per month, or $ 4.50	per quarter
1" "	2.00	" " 6.00	" "
1½" "	3.00	" " 9.00	" "
2" "	4.17	" " 12.50	" "
3" "	8.33	" " 25.00	" "
4" "	16.67	" " 50.00	" "
6" "	83.33	" " 250.00	" "

The charges for public fire protection, which include standard and non-standard fire hydrants and sprinklers, are as follows:

Standard Fire Hydrants			
All hydrants	$50.00	each	per year
Except public fire hydrants in Brighton, which are	30.00	"	"
Non-Standard Fire Hydrants			
For 2½" diam. hose connection	24.00	"	"
For 2" or 1½" diam. hose connection	18.00	"	"
For less than 1½" diam. hose connection	12.00	"	"
Sprinkler System			
For 500 sprinkler heads or less	50.00	"	"
For each additional sprinkler head	.10	"	"

Private fire protection for all plants is charged at the following rates:

	Per Year	Per Quarter
2½" double nozzle fire hydrants	$50.00	$12.50
2½" single " " " "	24.00	6.00
2½" " " " "	20.00	5.00
2" " " " "	16.00	4.00
1½" " " " "	8.00	2.00
1¼" " " " "	6.00	1.50
1" " " " "	4.00	1.00
Automatic sprinkler system, per head	.10	2.50

The quarterly bills for fire protection service arrived at by applying the above rates are subject to the following quantity discounts:

First	$ 25.00	per quarter	net
Next	100.00	" "	50% discount
Excess	125.00	" "	75 " "

The net annual bills for private fire protection service are $8.33, or $2.08 per quarter, per diametrical inch of the customer's service connection supplying the fire protection. The minimum charge for private automatic sprinkler systems is one-half of the above minimum.

S. A. MILLS,
Superintendent, Alabama Water Service Co.

South Orange, N. J.

Population	14,000
" served	14,000
Number of services	3,346
" " meters	3,332
" " hydrants	413
Miles of water main	44.8

The water rates in South Orange are $2.25 per 1,000 cu. ft., with no deviation of any kind, and sprinkler service is also on a meter basis, with no reduction or increase in the above rates.

Meter rentals are $3.00 per year for ⅝" meters; $4.00 for ¾" meters; $5.00 for 1" meters; $7.00 for 1½" meters; and $8.00 for 2" meters.

Curb service connections are furnished at $35.00 for ½" pipe; $40.00 for ¾"; $50.00 for 1"; and $75.00 for larger.

There are no hydrant rentals.

IRA T. REDFERN,
Village Engineer.

Galesburg, Ill.

Population	29,000
" served	24,000
Number of services	6,600
" " meters	6,600
" " hydrants	700
Miles of water main	88.53

Water bills are rendered quarterly, and a discount is allowed on all bills if paid by the 20th of the month in which they are rendered. The water rates are:

First 1,200 cu. ft.	$ .45	per 100 cu. ft.
Next 12,000 " "	.27	" " " "
" 40,000 " "	.18	" " " "
Balance consumed	.13½	" " " "

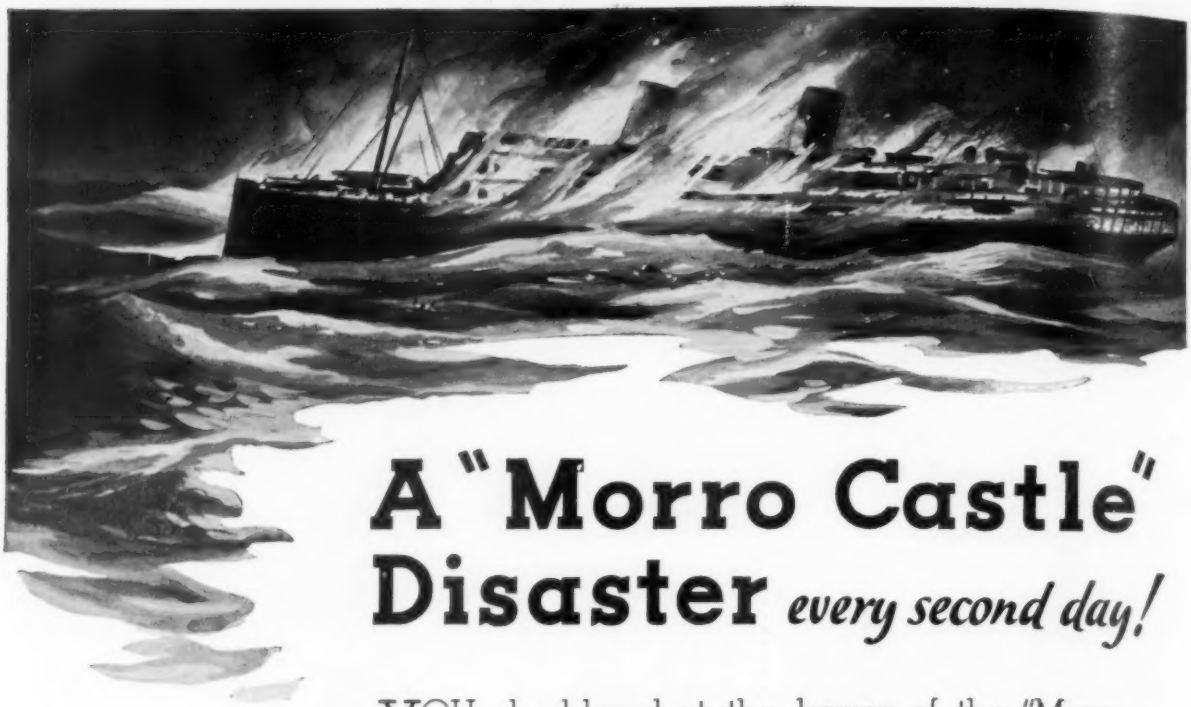
These are gross rates subject to discount for prompt payment.

The entire expense of all services is paid by the property owner and a deposit to the amount of the cost of the meter is required when the meter is set.

There is no charge for fire hydrants, and the Water Department runs service lines into buildings for sprinkler systems without cost.

H. O. CHAMBERS,
Superintendent, City Water Department.

Seventy-one reports have already been published from all parts of the country.



A "Morro Castle" Disaster *every second day!*

YOU shuddered at the horror of the "Morro Castle" holocaust. Yet the terrible loss of life in that disaster was less than the toll taken every two days by the nation's traffic accidents.

It's true. Reckless driving kills nearly a hundred persons every day on American streets and highways. Traffic experts estimate a 1934 death toll of 35,500 . . That is an increase of 5000 over 1933.

The remedy is more and better traffic control—more motorcycle officers—more Harley-Davidsons patrolling streets and highways **making motoring safer for motorists and pedestrians.**

Let us send you our latest Traffic Control literature, including data on our police motorcycles . . . . A postcard brings it.

HARLEY-DAVIDSON MOTOR COMPANY
DEPARTMENT M **MILWAUKEE, WIS.**

HARLEY-DAVIDSON

The Police Motorcycle

La Fayette, Ind.

Population	26,240
" served	24,500
Number of services	7,566
" " meters	3,861
" " hydrants	406
Miles of water main	80.0

The rates for metered water are as follows:

First	15,000 gals. per mo., per 1,000 gals.	$ .20
Next	15,000 " " " " "	.16
	100,000 " " " " "	.12
	400,000 " " " " "	.11
"	500,000 " " " " "	.10
All over 1,030,000	" " " " "	.09
Monthly minimum rate, metered		.40

Hospitals open to charity patients receive water free. Public schools, cemeteries, churches, benevolent organizations, and charitable institutions pay a straight rate of 10c per 1,000 gals. per month. Hotels, industrial and other commercial customers, agreeing and guaranteeing to pay for water on a minimum consumption of 25,000 gals. per 24 hrs. pay a straight rate of 10c per 1,000 gals. per month, and the same rate of 10c per 1,000 gals. per month on all quantities of water consumed above the minimum of 25,000 gals. per day.

The charge for public and private fire hydrants is $30.00 per year per hydrant, and fire lines or services for use only in extinguishing fires are charged as follows:

2" or under	$ 8.00
3"	12.00
4"	16.00
6"	20.00

J. A. RENTZ,
Superintendent, Municipal Water Works.

Martin's Ferry, Ohio

Population	15,900
" served	20,000
Number of services	3,663
" " meters	143
" " hydrants	210
Miles of water main	28.5

Domestic meters are read every three months, and industrial meters are read monthly. The meter rates are as follows:

Average Daily Use	Per 1,000 Gals.
1 to 1,000 gals	$ .25
1,000 " 2,000 "	.20
2,000 " 3,000 "	.15
3,000 " 10,000 "	.10
10,000 " 15,000 "	.09
15,000 " 25,000 "	.08
25,000 " 50,000 "	.07
50,000 " 75,000 "	.06
75,000 gals. and over	.05

The minimum charge on residence meters is $1.00 per month, and all meter rates are payable quarterly for small consumers and monthly for large consumers or manufacturers. The minimum monthly charges on industrial meters are:

⅝" meter	$ 1.50
¾" "	1.50
1" "	2.50
1¼" "	2.50
1½" "	2.50
2" "	3.50
3" "	3.50
4" "	8.00
6" "	10.00

Upon application by the consumer, the City Water Department installs a complete service from the main to the curb. The charges for such service for single dwellings of five rooms or more are:

¾" pipe laid under cement streets	$38.50
¾" " " " amiesite "	21.50
¾" pipe laid under brick or unimproved streets	18.50

For the laying of 1" pipe divided at the curb, there is a charge of $23.50.

The charges for pipe if laid under brick or unimproved streets are as follows:

1¼" pipe	$1.50 per ft.
1½" "	1.65 " "
2" "	1.90 " "

In addition to the above prices, a charge of $20.00 is made for laying any of said pipe under concrete streets, and an additional charge of $3.00 if any of said pipe is laid under a street of amiesite or resurfaced material. All the above prices are subject to change when material costs increase. Apartment houses of two or more apartments are serviced with a 1" line to the curb and divided at the curb by the owner to ¾" for each apartment, with a shut-off for each apartment. The charge for this type of service to the curb is:

1" pipe laid under concrete streets	$43.50
1" pipe laid under amiesite or resurfaced streets	26.50
1" pipe laid under brick or unimproved streets	23.50

The property owner must use copper tubing or lead pipe from the curb stop under the sidewalk to his property. Meters may be installed on services when application therefor is made by the consumer, but the city may order the installation of a meter and charge meter rates on any service pipe at any time.

Automatic sprinkler systems may be connected to an unmetered service, but such services may be controlled by meter at any time the Department feels it advisable.

E. D. JENKINS,
Superintendent of Water Works.

Boone, Iowa

Population	17,886
" served	11,000
Number of services	2,951
" " meters	2,951
" " hydrants	445
Miles of water main	42.86

For purposes of billing, the city of Boone is divided into three sections in which the bills are payable quarterly in rotation. All bills are payable in the office of the City Clerk on or before the 25th day of the month in which they are rendered, and carry a 10% penalty if not paid before that date. Water is shut off if the bill is not paid before the 10th day of the following month. There is a fee of $2.00 for shutting off the water and turning it on again when the bill is paid. All water rates are considered as a charge against the owner or owners of the property.

The quarterly water rates are as follows:

First	1,600 cu. ft.	32½c per 100 cu. ft.
Next	3,400 " "	25c " " " "
"	5,000 " "	20c " " " "
"	5,000 " "	15c " " " "
"	10,000 " "	13c " " " "
"	25,000 " "	10c " " " "
"	50,000 " "	9c " " " "
"	100,000 " "	8c " " " "
"	800,000 " "	7½c " " " "
All additional at		7½c " " " "

The minimum charge per quarter is $2.00, which allows the use of 620 cu. ft. of water.

The rate for water furnished to churches, public libraries, parsonages, public hospitals, private and public schools, Y.M.C.A.'s and all other charitable and eleemosynary institutions is 10c per 100 cu. ft. for amounts in excess of 620 cu. ft., but the minimum rate of $2.00 per quarter applies to these services as well as to all others in the city.

GEORGE A. NELSON,
Superintendent of Water Works.

Amesbury, Mass.

Population	11,000
" served	11,000
Number of services	2,216
" " meters	400
" " hydrants	240
Miles of water main	28.5

Bills for metered water are rendered twice a year, in April and October, and a discount of 25 per cent is allowed if the bills are paid within 30 days. The meter rates are:

37½c per cu. ft. for first 15,000 cu. ft.
29½c " " " next 15,000 " "
22½c " " " all over 30,000 cu. ft. and up to 60,000 cu. ft.
18¾c per cu. ft. for all over 60,000 to 100,000 cu. ft.

The Water Department receives the lump sum of $5,000 per year for hydrant service.

P. A. SANBORN,
Commisioner, Water Department.

Bloomington, Ill.

Population	30,930
" served	30,930
Number of services	10,070
" " meters	8,200
" " hydrants	777
Miles of water main	80.0

The meter rates in Bloomington are as follows:

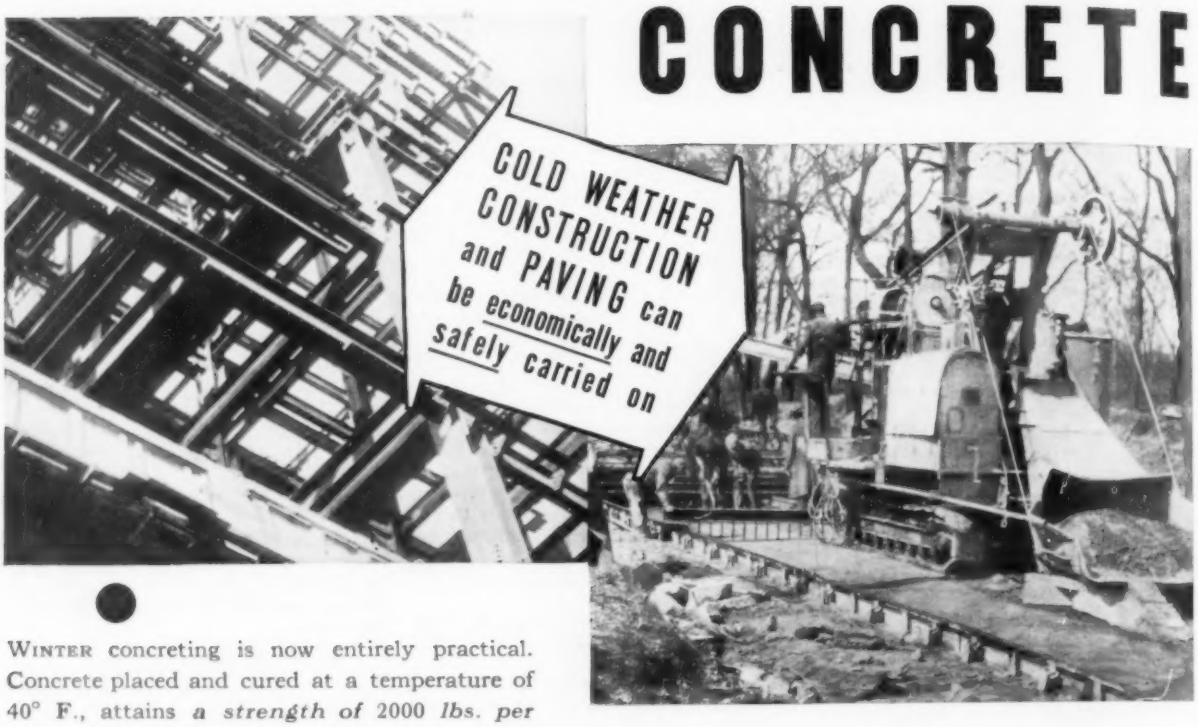
First	900 cu. ft. used	54c per 100 cu. ft.
Next	1,400 " "	45c " " " "
"	6,600 " "	36c " " " "
"	13,400 " "	27c " " " "
All over 22,300	" "	13½c " " " "

Any consumer who uses in any one month over 1,250,000 cu. ft. of water shall be charged, in lieu of the above rates, 6.375c per 100 cu. ft.

The minimum charge per month where a meter of less than 1" size is used, is 80c, and for any meter of 1" or over the minimum charge is $1.50 per inch of capacity or fraction thereof. The rates are net on all bills paid on or before the 10th of the month of the bill, and 10% is added after the 10th of the month.

C. C. WILLIAMS,
Superintendent, Water Department.

BETTER WINTER CONCRETE



WINTER concreting is now entirely practical. Concrete placed and cured at a temperature of 40° F., attains *a strength of 2000 lbs. per square inch in five days* when two pounds of Calcium Chloride per sack of cement is incorporated in the mix.

As shown by the chart, Calcium Chloride shortens by ONE-HALF the time required to gain 2000-pound strength with plain concrete.

These results are confirmed by the statement of the Bureau of Standards in a report presented to the Highway Research Board: "Concretes with all percentages of Calcium Chloride (0% to 3%) show increased strength over plain concrete at all ages tested."

This accelerated develcpment of early-strength concrete reduces the time during which special protection is required when concrete is placed below freezing temperatures. The use of Calcium Chloride thus makes winter concreting entirely—*and economically*—practicable. It insures *proper curing* as well.

Thus does Calcium Chloride concrete curing help to keep labor employed and contractors' equipment in use the year round. For complete, free information on cold-weather concreting, write to any of the following members of the

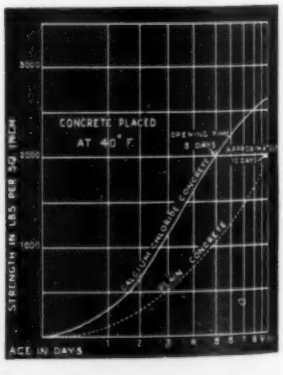
CALCIUM CHLORIDE ASSOCIATION

THE COLUMBIA ALKALI CORP.
Barberton, Ohio

SOLVAY SALES CORPORATION
61 Broadway, New York City

THE DOW CHEMICAL COMPANY
Midland, Michigan

MICHIGAN ALKALI COMPANY
60 E. 42nd St., New York City



CALCIUM CHLORIDE

FOR MODERN CONCRETE CURING

MUNICIPAL AND CIVIC PUBLICATIONS

Prices quoted do not include postage, unless so stated

Water Supply Textbook

Elements of Water Supply Engineering.—By Earle Lytton Waterman, Professor of Sanitary Engineering, State University of Iowa. John Wiley & Sons, Inc., New York. 1934. 302 pp. *Illustrated.* $3.50 *from* THE AMERICAN CITY.

A new textbook prepared particularly for undergraduates for classes in water-supply engineering, aimed to cover the fundamentals of the subject and not to be too long to be thoroughly studied by students. This book is well-prepared, and arranged in the order in which the topics naturally occur in reviewing the development of a water-works system: requirement of municipal water supplies; quantity of water required; quality requirements; examinations of water to determine its quality; sources of water supply; precipitation; ground waters; stream flow; impounding reservoirs; river and lake intakes; transportation of water; pumps and pumping plants; the treatment of water, including rapid sand filtration; removal of dissolved impurities, chlorination; distribution systems; distribution storage; operation and maintenance; and finance of water-works systems.

Housing

The Housing Program of the City of Vienna.—By Charles O. Hardy, assisted by Robert R. Kuczynski. Published by The Brookings Institution, Washington, D. C. 1934. *XIII* + 143 *pp. Illustrated.* $2.00.

In view of the fact that the housing program of the Social Democratic party in Vienna is ended, the author of this book surveys the housing history of that city, analyzing conditions that prevailed before the war, and showing how the intensified need for relief was met by the post-war housing program. This program was greatly influenced by the breaking of the power of the old house-owning class—politically by the democratic revolution, economically by the continuation of the rent restrictions which tended to keep dwellings occupied, preventing a normal turnover which would have released accommodations for new families. The municipal building program that started in 1919 is described from the points of view of construction, finance and administration, and covers apartment houses and cottage settlements with gardens. The author presents his own conclusions relative to the soundness of the basic policy of the program as a housing reform, not an emergency measure, and as to the way in which it was carried out. "From war to inflation, from inflation to rent restriction, from rent restriction to public housing, is a logical sequence. . . . Vienna has proved that it is possible for a poverty-stricken city, at a time when private enterprise has been driven out of the housing field, to provide decent homes for its poor at a nominal cost to them, and pay for the homes out of taxation."

City Manager Plan

The National Municipal League has published a pocket-size pamphlet of 48 pages, telling "The Story of the City Manager Plan," revised September, 1934. What the plan is and how it works are explained, and its effectiveness is attested by accounts of results in cities where the evidence is overwhelming. Charts show the organization of the old mayor-council form and the commission form, and of the city manager plan as paralleling the corporate organization of modern business. A list of the 376 cities which have the plan by charter is given. Those who are studying the plan should obtain this clear-cut presentation of "the most democratic and efficient form of municipal government." (Apply to the League, 309 E. 34th St., New York.)

Emergency Relief

The Publications Division of the Federal Emergency Relief Administration has issued a mimeographed "Index to Bulletins" covering its publications from May 31, 1933, to September 15, 1934. (Apply to FERA, Washington, D. C.)

Local Government

Local Government.—By H. Lloyd Parry, Hon. Lecturer in Public Administration at the University College of the South-West of England; formerly Town Clerk of Exeter. P. S. King & Son Ltd., Orchard House, Westminster, London. 1934. *VII* + 251 *pp. 6 shillings.*

The ten lectures included in this volume formed a University course covering the following subjects: The Origin and Development of English Local Government; The Poor Law; Highways and Streets; Public Health; Education; Town and Regional Planning; Housing; The Administration of Justice—Police; The Finance of Local Government; Systems of Local Government. The clarity and directness of the treatment and the breadth of the information given make the book of concrete value to students, local officials and civic workers.

English Local Government.—By Herman Finer, Reader in Public Administration at the London School of Economics. Columbia University Press, New York. 1934. *XIII* + 533 *pp.* $5.50.

There is an enlivening quality, an illuminating approach, in the presentation of the vast amount of information contained in this book, which attracts the reader and gives him hope of understanding the outlines of a system of which the author says, in introducing his interpretation: "On the one hand, it must not look simpler than it really is; on the other, the hopeless obscurity of the jungle must be avoided." The divisions of the study are: Nature and Problems [of local government]; Areas and Functions; Constitution, Powers and Organization; The Central-Local Relationship; The Finance of Local Government. In the Concluding Observations, the possible future of local government in this acquisitive, revolutionary modern world is analyzed from the point of view of attaining economic efficiency and preserving the system, and suggestions as to organization and the human element are made: "closer administration," the continual need for all measures which shall eliminate waste; and the importance of research—"there are too many things we do not know"—but not to the extent of needing the "municipal research bureaus to be found in America." "In England," says the author, "we have an extremely capable and trustworthy set of officials at headquarters." Means of research in public administration *outside* the departments are outlined, and of publicity for municipal administration. It is emphasized that local government is a highly skilled full-time occupation, and that in its service there must be a conscious substitution of public spirit for private profit.

Planning

Under the title, "Shall Our City Plans Gather Dust—or Make the Dirt Fly?", a paper by Harold S. Buttenheim, editor of THE AMERICAN CITY, was read before the Massachusetts Federation of Planning Boards, at Brookline, Mass., on October 4, 1934. Pointing out the public indifference toward planning as a budgetary item, the author calls for a civic crusade that shall challenge the imagination to action for peace-time service. He lists the issues that are stimulating enough to furnish a civic alternative for war and, in making suggestions as to how to go about such a movement, explains the ultimate economy of wise governmental spending. He urges greater forethought in the preparation, and skill in the carrying-out, of comprehensive city and regional plans, especially as an aid in securing PWA allotments for definite, well-considered projects. The importance of convincing the electorate is emphasized, "to make the dirt fly to constructive ends"; effective aid from the press is essential, and drastic revision of many of our present zoning ordinances, to safeguard rights rather than to restrict liberties. "Effective planning must capture the emotions by its crusading spirit, and the intellect by its comprehensive grasp of details."

Diesel Engines

Diesel Engineering Handbook.—Published by Business Journals, Inc., New York. 1934. 320 *pp.* $5.00.

The seventh edition of the Diesel Engineering Handbook appears after a lapse of four years. There are 14 chapters, beginning with a description of the principle of the diesel and of all makes of diesels, and the design of high-speed, low-capacity machines that have been developed in the last four years; and running through plant planning, engine specifications, technical questions of design and operation, and closing with the keeping of plant records and the diesel in transportation. To one not already familiar with the Handbook and with the subject, yet having a broad interest in it, a skillfully prepared index would be helpful because, as the editor states, "this is a veritable mass of information for engine builders, accessory manufacturers, engine purchasers, consulting engineers and plant operators."

Police

Organization and Administration of a Municipal Police Department.—By Chief Richard W. Morris, Geneva Police Department. Publication No. 30 of the New York State Conference of Mayors and Other Municipal Officials, Bureau of Training and Research, Albany, N. Y. 52 *pp.* $1.00.

Information as to actual practices with regard to police in 300 American municipalities. There are seven chapters: Introduction; The Authority of Police Chiefs; The Administration of the Police Department; The Distribution of Personnel; Equipment and Communications; The Crime Prevention Program; Final Recommendations and a Suggested Library for a Police Department. The live and practical data in this publication were obtained by questionnaire and travel.

Taxation

The system of taxation advocated by Mayor Wm. N. McNair of Pittsburgh, Pa., is explained in a 12-page pamphlet entitled "The McNair Five-to-One Plan," by Dr. John C. Rose. The main points presented are that the plan would shift the incidence of taxation; would lower taxes on homes; would tend to stimulate the productive use of land; and would stimulate industry and business. The plan proposes to set the municipal tax rate in the ratio of 5 on land value and 1 on buildings, thus exempting buildings 80 per cent of their value. (Apply to the author, 725 Bakewell Bldg., Pittsburgh, Pa.)

Finance

The U. S. Bureau of the Census has published "Financial Statistics of State and Local Governments: 1932," this being the United States summary of revenue receipts, governmental-cost payments, public debt, assessed valuations, and tax levies for the government of the states, counties, cities, towns, villages and boroughs, school districts, townships and other civil divisions. It has been prepared under the supervision of Starke M. Grogan, Chief Statistician in charge of Financial Statistics of State and Local Governments. 69 pp. 10c. (Apply to Superintendent of Documents, Washington, D. C.)

Libraries

"Library Projects Under FERA" is the title of Part II of the October, 1934, *Bulletin* of the American Library Association. It contains a summary of the rulings now in force for relief projects in libraries, to "utilize effectively the services of educated and trained persons from many professions, including librarians now unemployed and without adequate means of subsistence." Specific projects in various states are described, and the proposed New York State project receives particular attention. 16 pp. (Apply to the Association, 520 N. Michigan Ave., Chicago, Ill.

INTERNATIONAL

INTERNATIONAL TRUCKS

ARE ALL TRUCK

In every inch of Design

In every ounce of Construction

TRUCK quality must be of a different stamp than PASSENGER-CAR quality. Truck users want rugged stamina, for rigorous service! That is why you have lately seen in the truck advertising of some manufacturers so much talk of "all truck." They are aiming to satisfy the demand. But they are only now claiming what International Trucks have *delivered* for many years—EXTRA capacity for taking punishment and giving value. For more than twenty years the International Truck builders have built *only trucks.* No automobiles—no tempting opportunity to compromise. The new streamlined Internationals, with all their beauty of line, give you International ALL-TRUCK QUALITY. Sizes from ½-ton up, chassis f. o. b. prices from $390 up, at all International branches and dealers.

International Harvester Company of America, Inc.
606 S. Michigan Ave., Chicago, Ill.

Housing and Juvenile Delinquency

"A Statistical Study of the Distribution of Adult and Juvenile Delinquents in the Boroughs of Manhattan and Brooklyn, New York City," has been made by Irving W. Halpern, Chief Probation Officer, and John N. Stanislaus, Probation Officer, Court of General Sessions; and Bernard Botein, Assistant District Attorney, New York County. It has been published for the New York City Housing Authority and answers the questions that the lay inquirer about crime and juvenile delinquency in this section would be most likely to ask. 164 photo offset pp., besides many folding inserts of maps, tables, charts. Only a limited edition has been published, which is being distributed to selected organizations. The report is not for sale.

Slums

"A Sheet-a-Week," prepared by Howard Whipple Green, of Cleveland, Ohio, in its issue of September 22, 1934, contains an analysis entitled "Slums —A City's Most Expensive Luxury." 4 photo offset pp. with 3 inserted maps. A description of the slum area is given, with data on operating costs and social and health conditions. The basic map shows the equivalent monthly rentals of each small area or census tract in Greater Cleveland, and the overlay maps show the geographical distribution of murders, houses of prostitution, cases of delinquency among boys, and deaths from tuberculosis. With a map of the slum area studied appears a chart showing the percentage of families, gainful workers, jobless, relief families, etc., located in this district. $1.00. (Apply to Mr. Green, 1900 Euclid Ave., Cleveland, Ohio.)

Child Welfare

"A Tabular Summary of State Laws Relating to Public Aid to Children in Their Own Homes, in Effect January 1, 1934," is a valuable collection of information published by the Children's Bureau, U. S. Department of Labor. 30 photo offset pp. The information for Alaska and the 48 states is thus divided: Under "Conditions under which aid may be given"—state and legal reference, age of child, persons to whom aid may be given, residence and citizenship, economic and home conditions, maximum monthly allowance; under Administration—agency administering, procedure in granting aid, supervision of family, review and continuance of allowance, state supervision or administration, source and distribution of funds. 10c. (Apply to Government Printing Office, Washington, D. C.)

Other Reports Received

BERKELEY, CALIF.—Annual Report, City Manager, year ending June 30, 1934. 64 pp.

WENDE, N. Y.—The Erie County Farm. Report by Buffalo Municipal Research Bureau, Inc., October, 1934. 10 mimeographed sheets.

CAMBRIDGE, MASS.—Annual Report, Water Board, 1933. 48 pp.

CHICAGO, ILL.—Annual Report, City Treasurer, 1933. 24 pp.

CINCINNATI, OHIO.—Report of Water Works, 1930, 1931, 1932, 1933. 182 pp. plus several folding charts.

HARRISBURG, PA.—"Twelve Big Jobs—to make a better and busier Harrisburg." Report of Harrisburg Chamber of Commerce, issued October, 1934, for past 12 months. 15 pp.

HINTON, W. VA.—City Manager's Report, October 6, 1934. 5 mimeographed sheets.

NEW YORK CITY.—Annual Report, Citizens Budget Commission, 1933-34. 22 pp.

PITTSBURGH, PA.—"Civic Pittsburgh: Facts and Figures About Your Business." 1934. Published by J. C. Slippy, Pittsburgh. 20 pp.

TRENTON, N. J.—Annual Report, City Comptroller, 1933. 85 pp.

CONVENTIONS—WHEN AND WHERE

(Figures in parentheses following the name of the convention city indicate the estimated attendance other than local)

NOVEMBER 8-10.—OMAHA, NEBR.
American Water Works Association—Missouri Valley Section. Annual meeting. Secretary, Earl L. Waterman, University of Iowa, Iowa City, Iowa.

NOVEMBER 9-10.—COLUMBUS, OHIO.
Ohio State Planning Conference. Annual meeting. Secretary-Treasurer, John M. Picton, Jr., 409 Hamilton County Court House, Cincinnati, Ohio.

NOVEMBER 12-15.—SANTE FE, N. MEX. (350)
American Association of State Highway Officials. Annual convention. Executive Secretary, W. C. Markham, 1222 National Press Building, Washington, D. C.

NOVEMBER 12-14.—ELIZABETH CITY, N. C. (300)
American Water Works Association—North Carolina Section. Annual convention. Acting Secretary, M. F. Trice, State Board of Health, Raleigh, N. C.

NOVEMBER 12-14.—ELIZABETH CITY, N. C.
North Carolina Sewage Works Association. Annual convention. Acting Secretary, M. F. Trice, State Board of Health, Raleigh, N. C.

NOVEMBER 15-16.—ASBURY PARK, N. J. (500)
New Jersey State League of Municipalities. Annual convention. Executive Secretary, S. S. Kenworthy, Trenton Trust Building, Trenton, N. J.

NOVEMBER 16-19.—WASHINGTON, D. C. (400)
American Country Life Association. Conference on National Planning and Rural Life. Executive Secretary, Benson Y. Landis, 105 East 22d Street, New York.

NOVEMBER 16-17.—ASBURY PARK, N. J. (400)
New Jersey Health and Sanitary Association. Annual meeting. Secretary, Dr. Edward Guion, Box 418, Atlantic City, N. J.

NOVEMBER 21-23.—CALGARY, ALTA. (260)
Alberta Association of Municipal Districts. Annual convention. Secretary, E. Pinchbeck, Spruce Grove, Alta.

NOVEMBER 22-24.—CHICAGO, ILL.
United States Conference of Mayors. Annual conference. Secretary, Paul V. Betters, Drexel Avenue and 58th Street, Chicago, Ill.

NOVEMBER 26-27.—PITTSBURGH, PA.
National Municipal League. Annual convention. Secretary, Howard P. Jones, 309 East 34th Street, New York.

NOVEMBER 26-27.—PITTSBURGH, PA.
National Association of Civic Secretaries. Annual convention with the National Municipal League. Secretary, Miss H. Marie Dermitt, Hotel William Penn, Pittsburgh, Pa.

NOVEMBER 27.—PITTSBURGH, PA.
Proportional Representation League. Annual meeting in conjunction with National Municipal League. Executive Secretary, George H. Hallett, Jr., 309 East 34th Street, New York.

DECEMBER 4-6.—WINNIPEG, MAN. (400)
Union of Manitoba Municipalities. Annual convention. Secretary, John Spalding, Miniota, Man.

DECEMBER 6-7.—CORAL GABLES, FLA.
Florida League of Municipalities. Semi-annual meeting. Secretary-Treasurer, E. P. Owen, Jr., 1201 Lynch Building, Jacksonville, Fla.

DECEMBER 6-7.—WASHINGTON, D. C. (200)
Highway Research Board of the National Research Council. Annual meeting. Director, Roy W. Crum, B and 21st Streets, Washington, D. C.

DECEMBER 12-14.—SEATTLE, WASH.
Pacific Northwest Regional Planning Commission. Second Conference. Chairman, Marshall N. Dana, 220 Federal Court House, Portland, Ore.

DECEMBER 27.—NEW YORK.
American Water Works Association—New York Section. Winter meeting. (Hotel New Yorker.) Secretary, R. K. Blanchard, Care Neptune Meter Co., 50 East 42d Street, New York.

JANUARY 3-5.—AUSTIN, TEXAS. (250)
Texas Water Works Short School. Annual session. Address: V. M. Ehlers, Secretary of the Southwest Water Works Association—Texas Section, Austin, Texas.

JANUARY 10-12.—WASHINGTON, D. C.
American Engineering Council. Annual meeting. Executive Secretary, Frederick M. Feiker, 744 Jackson Place, Washington, D. C.

JANUARY 12.—PROVIDENCE, R. I.
Rhode Island Town and City Clerks' Association. Annual meeting. Secretary, Alice A. Tonge, Deputy Town Clerk, Town of Warwick, Apponaug, R. I.

JANUARY 16-18.—NEW YORK.
American Society of Civil Engineers. Annual meeting. Secretary, George T. Seabury, 33 West 39th Street, New York.

JANUARY 21-25.—LAFAYETTE, IND. (800)
Purdue Road School. Annual session. Address: Prof. Ben H. Petty, Engineering Extension Department, Purdue University, Lafayette, Ind.

JANUARY 22-25.—NEW YORK.
American Institute of Electrical Engineers. Annual winter convention. Assistant National Secretary, H. H. Henline, 33 West 39th Street, New York.

JANUARY 22-25.—WASHINGTON, D. C.
American Road Builders' Association. Convention and exhibit. (Willard Hotel.) Engineer-Director, Charles M. Upham, 938 National Press Building, Washington, D. C.

MARCH 27-29.—LONDON, ONT.
American Water Works Association—Canadian Section. Annual meeting. (Hotel London.) Secretary-Treasurer, Dr. A. E. Berry, Ontario Department of Health, Parliament Buildings, Toronto, 5, Ont.

MAY 6-10.—CINCINNATI, OHIO.
American Water Works Association. Annual convention. (Hotel Netherland Plaza.) Secretary, Beekman C. Little, 29 West 39th Street, New York.

JUNE—PRAGUE, CZECHO-SLOVAKIA.
International Housing Association. Congress. General Secretary, Prof. Franz Schuster, Hansa-Allee, 27, Frankfort a/M, Germany.

JUNE 24-29.—PARIS, FRANCE. (1,000)
International Chamber of Commerce. Biennial congress. Manager of the American Section, John P. Gregg, Connecticut Avenue and H Street, N. W., Washington, D. C.

Recent City Manager Appointments

ROBERT E. BAYLOR on October 1 became City Manager of Bluefield, Va., succeeding Edward H. Ruehl.

R. M. Dorton, former Manager of Monterey, Calif., became City Manager of Long Beach, Calif., on October 1.

E. C. Dunn, City Engineer of Alexandria, Va., has been appointed Acting City Manager. The former Manager, Wallace Lawrence, has accepted a position with a Baltimore engineering firm.

Major Jules Hanique, former CWA Chief Engineer and Acting Director for Los Angeles County, was appointed City Manager of Compton, Calif., on October 2. He succeeds W. A. Pearson, who resigned to become consulting engineer for the San Marino School District.

H. C. McCrea has succeeded T. C. North as City Manager of Blairsville, Pa.

Bill N. Pardee, former Manager of Visalia, Calif., became City Manager of Monterey, Calif., on October 1.

Thomas M. Sullivan succeeded W. C. Lefebvre as City Manager of Phoenix, Ariz., on October 3.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

GENERAL MOTORS T-18

A Low-Priced All-Purpose Truck

$675

CHASSIS F.O.B. PONTIAC

For only a few dollars more than the lowest-priced 1½-ton trucks, you can own this quality-built GMC T-18 of ample capacity for the job. During its lifetime, its small extra cost will be saved several times over, through lower operating and upkeep costs.

This GMC T-18 is a big, husky, capable 2-3 ton producer. It will haul loads and maintain schedules in a way you wouldn't expect from lighter and cheaper trucks. Yet it carries no needless weight to eat up gas, oil and tire dollars.

Like all other General Motors Trucks, the T-18 is "engineered for the job." Its wheelbase lengths are longer—140¾" and 164¾". Its weight distribution conforms to S.A.E. standards. It has many outstanding design features, including heavier frame; full-floating rear axle *with straddle-mounted pinion* for maximum strength and longer life; stronger, drop-forged wheels; modern, centrifuse brake drums that save on upkeep; and a valve-in-head GMC engine whose higher sustained torque insures faster deliveries, more trips, greater profit. And best of all, this worker and earner is $80 lower in price than the average of other trucks of comparable size.

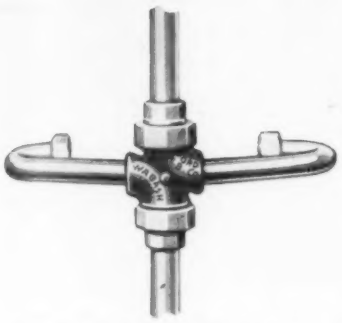
A General Motors Truck representative will be glad to supply additional information. A phone call will bring him to your place of business.

GENERAL MOTORS TRUCKS AND TRAILERS

GENERAL MOTORS TRUCK COMPANY — Time Payments Available Through Our Own Y. M. A. C. — PONTIAC, MICHIGAN

NEWS AND ILLUSTRATIONS

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings



THE FORD METER BOX COPPERHORN FOR INSTALLING WATER METERS

A Setting for Installing Water Meters in Basements

For installing water meters in basements, the Copperhorn, made by The Ford Meter Box Co., Wabash, Ind., makes a convenient setting. It permits the meter to be placed at the proper height for cleanliness and convenience in reading, saves couplings and fittings ordinarily used in placing the meter in the proper position, and makes a very attractive appearance. It is easily installed, since it is necessary only to cut out about 4 inches in the vertical pipe, thread the pipe and set in the Copperhorn. On a new service the pipe is run up to the desired height, the Copperhorn is attached, and the piping carried on up, the Copperhorn serving as a permanent spacer in the piping and eliminating the need of a meter or a blank commonly used to get the spacing. This unit may also be used in horizontal piping and makes a very satisfactory and convenient installation for a shallow outside setting. In this case the meter is raised about 4 inches above the service line.

This Ford Copperhorn saves meter couplings, pipe fittings, pipe joints and labor in installing. It cuts the pipe friction or pressure loss to less than half that through the ordinary fittings it replaces. It provides an all-copper water way, bronze coupling nuts and union swivels, and freedom from all corrosion and rusting troubles. It assures a permanent, trouble-free meter setting, and meter changes can be made easily.

New Officers and New Joint Administration for A. M. E. and I. A. P. W. O.

At its joint convention with the International Association of Public Works Officials in Rochester last month, the American Society of Municipal Engineers elected the following officers: President, Harrison P. Eddy, Jr., Boston Mass.; Vice-Presidents, Bryson Vallas, New Orleans, La., George B. Gascoigne, Cleveland, Ohio, and Thomas Buckley, Philadelphia, Pa.; Treasurer, H. L. Howe, Rochester, N. Y. The I.A.P.W.O. elected the following officers: President, Alfred E. Roche, Commissioner of Public Works, Troy, N. Y.; Vice-Presidents, Mark B. Owen, Commissioner of Public Work and Engineering, Dearborn, Mich., J. Eugene Root, Director of Public Works, Cincinnati, Ohio, John S. Flockhart, Assistant Engineer, Bureau of Street Cleaning, Newark, N. J.; Treasurer, Edwin A. Miller, Supervisor of Maintenance, Department of Public Works, Rochester, N. Y.; Secretary, A. M. Anderson, 100 North LaSalle Street, Chicago, Ill.

The governing boards of the two organizations appointed Donald C. Stone, Director, Research Division, Public Administration Service, as Executive Director of the two organizations. This is not a merger but each organization appointed a committee with power to work out a coordinated program of joint activity.

A New Maintenance Tool

The Silver King road shaper, brought out by The Fate-Root-Heath Co., Tractor Division, Plymouth, Ohio, is a new, simple, and absolutely practical unit for leveling road surfaces, drives, berms, flying fields, athletic fields, race tracks, and any similar surface of bladeable material. It does a good job in leveling blacktop and in maintaining traffic-bound macadam, as well as in the leveling of earth roads and other earth surfaces. The Silver King shaper was designed by E. C. Gledhill and is powered by a Silver King tractor made by the Fate-Root-Heath Co.

The four-speed transmission of the tractor provides variable speeds for all types of road work, and the high gear is for transportation or traveling from and to the job, or from one job to another, saving time and labor costs. It is equipped with low-pressure tires, rides smoothly, saves fuel and increases speed, which makes cost of operation very low. Two blades, set at opposing angles, shave off bumps and corrugations, mix and refine the material and deposit it in ruts and depressions. The straight-edges at the sides keep the blades running evenly and at uniform depth, and the result is a level and even surface. The entire weight of the road shaper, which is 1,400 pounds, rests on blades, with the straight-edges to keep them running at the desired depth.

Columbia Opens New Alkali Plant

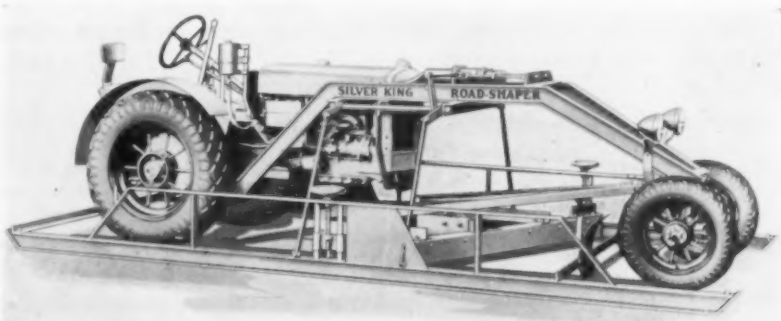
Early this fall The Columbia Alkali Corporation, Barberton, Ohio, opened its new alkali plant in Corpus Christi, Texas. This is the first alkali plant to be opened in the far South and every detail has been provided for so that alkali buyers will obtain from the very start the fullest cooperation in the matter of quality and service. At the present time the new plant will manufacture only heavy chemicals, including soda ash and caustic soda, also carrying stocks of modified sodas, special alkalies, detergent and flake and solid calcium chloride. It is expected that a number of special products for the southwestern territory now being handled from Barberton will be manufactured in Corpus Christi.

McLaughlin Joins Pittsburgh Equitable Meter

The Pittsburgh Equitable Meter Co., and its subsidiary, the Merco Nordstrom Valve Co., Pittsburgh, Pa., has announced the affiliation of W. R. McLaughlin, prominent measurement engineer, with its sales organization. Mr. McLaughlin's fifteen years of experience in practically every type of measurement and distribution work will be a valuable asset in selling Pittsburgh water meters and Nordstrom lubricated plug valves. Mr. McLaughlin will be located in Dallas.

Small Fatally Injured

Kenneth I. Small, Manager of the New York office of the Chicago Bridge & Iron Works, Chicago, Ill., was struck by a truck and fatally injured on October 10, 1934, at Portland, Maine. Mr. Small entered the employ of the company in 1899 and has been in charge of the New York office since 1910.



THE NEW SILVER KING ROAD SHAPER, POWERED BY A SILVER KING TRACTOR

"Better satisfied with this pipe than any we have ever bought"*

Less than two years ago the first length of Super-de Lavaud Pipe was "cast without chill in a metal mold." Since then we have made and sold *more than seven million feet.* Users like this pipe to the point of enthusiasm, as evidenced by comments such as the one quoted in the headline of this advertisement. They find it tougher, stronger, more ductile, and that, with ordinary care, breakage is almost unknown. Doubled impact-strength gives this pipe powerful inherent protection against damage from shocks encountered in transportation, handling and laying. These advantages are made possible by the patented Super-de Lavaud process in which the pipe is *cast without chill in a metal mold.* For further information, write for booklet.

UNITED STATES PIPE AND FOUNDRY CO.
BURLINGTON, N. J.

Foundries and Sales Offices throughout the United States

*From statement of user in our files.

U.S. SUPER-DE LAVAUD PIPE

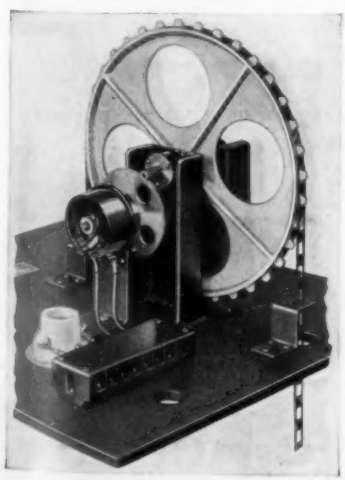
IMPACT RESISTANCE INCREASED MORE THAN 100%

Mention THE AMERICAN CITY—it helps.

ALLAN BEACH, ADVERTISING MANAGER, LITTLEFORD BROS., CINCINNATI, OHIO, WHO HAS BEEN ELECTED FOR THE SECOND TIME TO THE OFFICE OF SECRETARY-TREASURER OF THE NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION

Electronic Relay Facilitates Telemetering

An electronic relay, by transforming minute electrical currents into useful forces, plays an important part in a new telemetering system recently developed by the Bailey Meter Co., Cleveland, Ohio, for measuring pressure, temperature, liquid level and other factors at distant locations. The electronic relay operated Galvatron receiving element is mounted in a neat-appearing moisture-proof pressed-steel casing, and records as many as four factors on one 12-inch diameter circular chart. The transmitting element consists principally of a variable resistance unit which is operated by the metering device. In the case of a float-operated transmitter for liquid level, a float, by means of a perforated metal tape, operates a sprocket which moves the rheostat. When necessary, an electric bulb is provided to prevent frost from forming on the resistance unit, as shown in the accompanying illustration. For distances up to 10 miles, accuracy to within 1 per cent scale reading can be obtained by using a three-wire connection between the metering device and the remote recording apparatus, with telephone lines or their equivalent as the transmitting medium.



THE TRANSMITTING UNIT OF THE BAILEY LONG-DISTANCE RECORDER

Only a small amount of current is required for this system, because a vacuum tube system amplifies the transmitted power to a sufficient degree to assure positive operation of the equipment. In view of this low current, dry cells, used to produce the necessary direct current supply, should last from six months to one year. Since both current and voltage are so small and since the current is direct, there is no danger of interference between adjacent telephone lines and the recording circuit. This eliminates all special filters and insulating transformer equipment.

When it is desired to transmit indications for more than three miles, and where only two wires may be used, a potentiometer circuit is recommended. An important advantage of this system is that additional records up to four can be obtained with the addition of only one wire per record. Thus two records will require three transmission wires.

Auxiliary Roll Makes Smooth Road Surfaces

Highway engineers are agreed that proper compaction is a most important factor in obtaining long service from paving, and they require roller equipment which will produce greater and more uniform compaction and a perfect level on the paving surface. The new Hercules Ironer Roll, recently announced by the Hercules Co., Marion, Ohio, as an attachment for its three-wheel rollers, is designed to meet these requirements.

This Ironer Roll is an auxiliary roll of small diameter, mounted in place of and interchangeable with the scarifier. It is hydraulically operated and roller-bearing mounted, and has great flexibility in its operation, having a range from 6 inches below to 6½ inches above grade. In operation, a weight corresponding to more than 50 per cent of the total weight of the entire roller may be exerted on this auxiliary roll and, as the diameter of the roll provides a shorter arc of contact with the material being rolled, better compaction is obtained, high spots are eliminated and a uniformly level surface obtained. Positive power control automatically maintains proper traction on the rear driving wheels at all times.

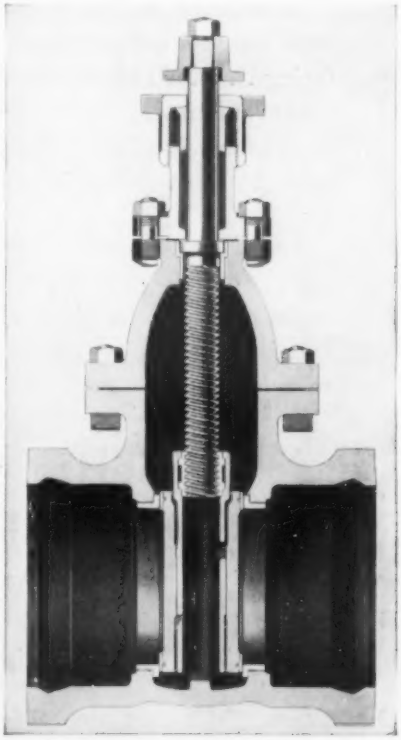
By placing this auxiliary roll at the rear of the Hercules three-wheel roller, a plane about 17 feet in length is obtained. This long plane surface eliminates short waves in the road surface which ordinary rollers do not always eradicate. It is claimed that this auxiliary roll requires less rolling for the job and eliminates the necessity for cross rolling entirely. This last feature is especially desirable where it is necessary to maintain traffic during construction, as a single traffic lane may be repaved in this manner without obstructing the second lane.

A HERCULES THREE-WHEEL ROLLER EQUIPPED WITH THE NEW HERCULES IRONER ROLL

A New Iron Body Gate-Valve

A new water-works iron-body gate-valve with a key-operated stuffing-box that can be serviced from the street level without necessitating any digging and repaving of roadway surfaces has been brought out by Jenkins Bros., 80 White Street, New York. This immediately eliminates a major part of the cost attached to the regular inspections of buried valves and permits more frequent inspections, which would tend to cut down water losses. The valve is made in two patterns, double disc, parallel seat type and solid wedge type. Both conform to all the specifications of the American Water Works Association.

The accompanying illustration shows how this new key-operated stuffing-box works. The key fits over the stuffing-box nut, and as this is turned down, the stuffing-box follower compresses the packing, making a tight joint. To prevent corrosion troubles, the entire stuffing-box assembly is of bronze. The stuffing-box is exceptionally deep and contains an unusual bulk of packing, so that it is easily made tight.



THE JENKINS IRON BODY GATE-VALVE

Specify

TRINIDASCO

—cold-laid Asphalt Pavements

Trinidasco—the Native Lake asphalt mixture that is laid cold—is prepared with the same grades of stone, sand and other mineral aggregate and Trinidad Lake Asphalt used since 1876 in the construction of standard types of Trinidad hot-mix pavements.

Trinidad is the safest asphalt for durability. Trinidasco cold-laid pavements have a high coefficient of friction, and are safe for modern traffic.

Trinidasco cold-laid pavements are used for new construction . . . for resurfacing . . . for maintenance. Trinidasco is convenient . . . can be laid with hand tools or mechanical devices immediately after preparation, or from stock piles.

Specifications and full particulars covering mixtures for asphaltic concrete, asphalt macadam and sheet asphalt (binder and top) pavements furnished on request.

THE BARBER ASPHALT COMPANY

Philadelphia

New York Chicago St. Louis

NRA MEMBER U.S. WE DO OUR PART

How much do YOU bid?

How much is it worth to you to absolutely protect your property and equipment from damage? What would it be worth to you to be assured that outsiders could not enter your property? Unnecessary losses which amount to millions of dollars annually can easily and economically be avoided.

Because of the superior quality of raw material, hot-dip galvanizing processes and expert erection service Cyclone Fence gives added years of service. Because it is made better and lasts longer Cyclone Fence Property Protection costs but a few cents per day.

Eliminate the possibility of costly damage, theft and liability suits. Find out how little it will cost to fully protect your property. An accurate estimate will be furnished without obligating you in any way. Write for catalog. Address Dept. AC.

CYCLONE FENCE COMPANY

General Offices: Waukegan, Illinois

Branches in Principal Cities

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

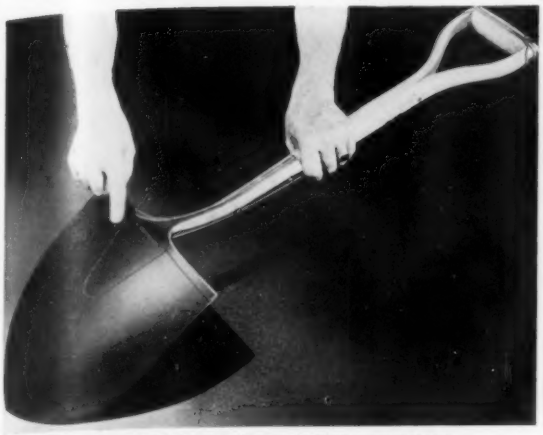
Pacific Coast Division

Standard Fence Company

General Offices: Oakland, Calif.

Cyclone—not a "type" of fence—but fence made exclusively by Cyclone Fence Company and identified by this trademark.

Cyclone Fence REG. U.S. PAT. OFF.



THE NEW WOOD HAND SHOVEL, SHOWING THE NEW CLOSED-BACK FEATURE

A New Closed-Back Hand Shovel

A new hand shovel, known as Wood's Closed Back, which resembles the familiar hollow back type shovel except that instead of the usual hollow in the back of the blade there is steel plate welded securely to the blade and extending up the socket, has been announced by the Wood Shovel & Tool Co., Piqua, Ohio. The upper part of the plate is free to permit flexing and, since it is so designed that there is no strain on the insert, it can not pull loose. By this construction, the one-piece steel blade is made smooth both front and back, and yet permits the use of the tapered steel socket, which is heat-treated to provide strength and springiness.

Other features of this new shovel are the straight handle and turned shoulder. To replace a handle it is only necessary to push the new handle into position and replace two rivets. The turned shoulder consists of a lapping-over of the metal at the top of the blade and the pressing of this double thickness of metal into a sturdy beading which is designed to give greater strength to the frog, eliminate blade splitting and provide foot comfort for workers.

Research in Joint Fillers for Brick Pavements

In December, 1933, the National Paving Brick Association, Washington, D. C., established a Research Bureau at the Engineering Experiment Station of Ohio State University to investigate the best utilization of vitrified brick in the design and construction of pavements. The research work to date has been principally in connection with joint fillers used in brick pavement construction, with a view to developing a material that will be less exuding in character than the bituminous filler now in general use. Laboratory tests simulated service conditions with brick pavements, having joints filled with various materials constructed in panels and subjected to electrical heat on a definite schedule.

The tests warrant the conclusions that the exuding of filler can be practically eliminated by the use of a blended asphalt with a high melt point. A type of plastic sulphur also proved to be suitable. By the addition of mineral matters to bituminous cement, exuding can be materially reduced. The reduction of exudation of fillers has assumed especial importance since the removal method of filler application with vertical fiber lug brick has demonstrated by actual tests that it will produce a surface with excellent anti-skid characteristics.

The program to check the laboratory findings has been completed. The more promising filler materials will be included in the construction of experimental sections in a brick pavement and the results in service observed. The National Paving Brick Association plans to continue to maintain its Research Bureau with the view of extending the usefulness and value of brick as a paving material. The work is under the general supervision of Dr. G. A. Bole, Research Professor at the Ohio State Experiment Station, and Dr. W. C. Rueckel, Research Engineer, is in direct charge. George F. Schlesinger, formerly Ohio Highway Director, is Engineer-Director of the National Paving Brick Association.

Breaking and Repairing a Hydrant in Decatur, Ill.

One of the most interesting features of the monthly meeting of the Old National Trail Volunteer Fireman's Association, which was held on September 19 in Decatur, Ill., was the demonstration of breaking and repairing the improved Columbian hydrant equipped with safety flange, manufactured by the Columbian Iron Works, Chattanooga, Tenn., Division of the Mueller Co., Decatur, Ill. The three illustrations show a complete story of the value of the device, which causes the hydrant to break at a predetermined point when struck by a violent blow. The safety flange and safety coupling yield to the blow and break, while the hydrant itself is not damaged. These two inexpensive parts make possible repairing and restoring the hydrant in ten minutes' time for efficient fire duty.

BREAKING AND REPLACING A HYDRANT IN QUICK TIME

Carbondale and Worthington Consolidate Refrigeration Interests

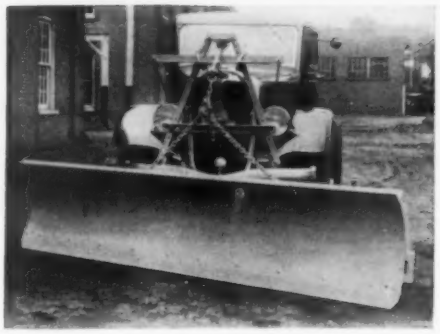
Announcement has been made of the consolidation of the interests of the Carbondale Machine Co., of Carbondale, Pa., with those of the Worthington Pump and Machinery Corporation, Harrison, N. J., in the general refrigeration field, operating in the future as the Carbondale Machine Corporation. The Carbondale Machine Corporation will transfer all necessary personnel and equipment to Harrison and in the future will build its line of machinery at the Worthington plants. It is stated that the present extensive and modern shop facilities of Worthington, with the additional provisions being made for the fabrication of Carbondale's refrigeration condensers, piping systems, chilling machines and filter presses, will further extend the organization's ability to serve the refrigeration field.

Record Transformer Order and Record Transformers

Amounting to approximately $1,000,000, the largest single order for transformers placed in the last five years has just been awarded to the Westinghouse Electric & Manufacturing Co. by the Bureau of Power and Light of the city of Los Angeles. Seven 65,000-kva transformers, to be installed at the Los Angeles terminal of the 287,000-volt transmission line originating 285 miles distant at Boulder Dam, are included in the order. The units will be arranged in two banks of three each, with one stand-by. They will step-down the incoming high voltage to 132,000 volts, for the distribution ring supplying electrical service to Los Angeles and the surrounding territory.

For use in service at the highest commercial voltage in distribution systems today, the units are the largest in size and have the heaviest rating of present-day power transformers. Each unit will weigh nearly 500,000 pounds, stand 35 feet high and occupy 19 x 20 feet floor space. The two banks of transformers, will be rated at a capacity equivalent to about 300,000 horsepower.

Good Roads



GOOD ROADS MACHY. CORP.
KENNETT SQUARE, PA.

Ask for Snow Plow Catalog No. 53

SNOW PLOWS

COLECTO

SANITARY REFUSE COLLECTORS

Having an easy time—isn't he—loading this COLECTO Model SH Refuse Collector? Waist-high loading and the hydraulically-operated hoisting device make it possible for him to accomplish about as much as three or four men with the old-fashioned, high, open-type wagon—and with infinitely less physical strain! The refuse is quickly carted away in the enclosed watertight body, and dumped by the same hydraulic hoist used for loading. This model is a big money-saver for any city—particularly for any city having large loads and long hauls! Capacity—either 10 or 15 cubic yards.

Rear loading models in 6 or 8-cubic yard capacities.

Descriptive bulletins sent on request

MUNICIPAL SANITATION CORP.
BRIDGEPORT CONN.

SINCE 1867

COLDWELL

SUPER "L" TWIN WITH GANG ATTACHMENT

SUPER POWER!

COLDWELL Super "L-Twin" with sturdy gangs attached is an exceptionally powerful twin-cylinder power lawn mower and roller, combining complete flexibility with large cutting capacity. Three travel speeds.

Width of cut—25 inches to 94 inches.

Dependable performance. Extremely simple and economical to operate.

Sulky to ride, optional.

All Coldwell Power Lawn Mowers and Rollers, including the motors, are manufactured complete in the Coldwell plant.

The twin-cylinder motor and all parts are designed especially for the job where an abundance of power is required.

FULL PARTICULARS FURNISHED UPON REQUEST

COLDWELL LAWN MOWER CO., NEWBURGH, N. Y., U. S. A.
Manufacturers of Lawn Mowers—Hand, Horse, Gasoline, Electric

A Ross Moldboard SNOW PLOW CUTS TWO WAYS:—

It cuts clean roads through the deepest, heaviest snows, and it cuts snow removal costs to a new low figure!

The "snow flow" is the reason why. Let us tell you about it.

The Burch Corporation
Crestline, Ohio

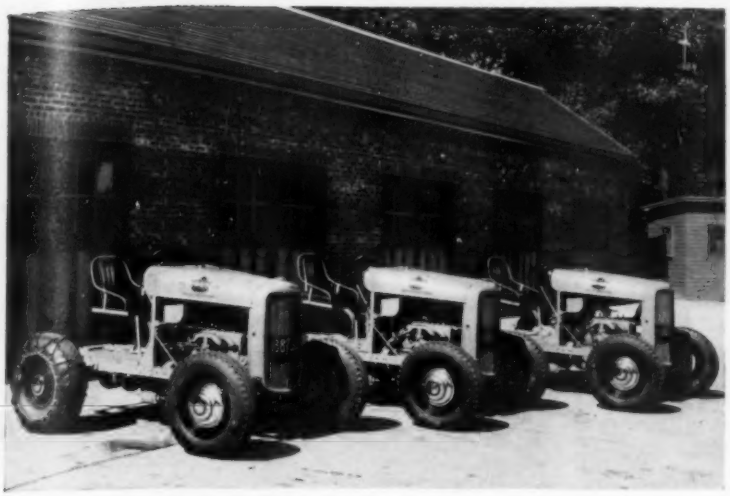
DOLGE WEED KILLER

"Sprinkles Weeds Away"

SAVE MONEY

Order now for spring delivery — Protection against increased prices—Special Municipal prices now in effect. Write for details.

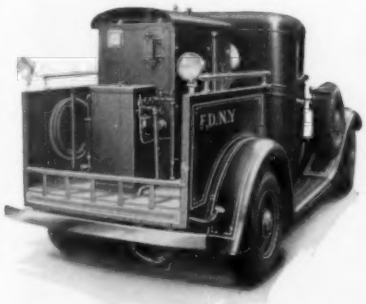
THE C. B. DOLGE CO., *Westport, Conn.*



THREE OF THE WORTHINGTON TRACTORS DELIVERED TO THE PARK DEPARTMENT OF NEW YORK CITY

Worthington Receives Large Order

The Worthington Mower Co., Stroudsburg, Pa., has recently been awarded a contract for 20 Worthington Model B tractors by the Park Department of the city of New York. At the same time this company was the successful bidder on machines for the Long Island State Park Commission, which calls for Worthington Parkovers, dump-body tractor and gang mowers. An interesting feature of this contract is that each of the machines is to be assigned to one operator, and his name will be painted on the hood, so that he will be responsible for the use and care of the machine. This will tend to lengthen the life of the machine through individual responsibility.



THE ARISTOCRAT STEAM BLAST

Mobile Unit Produces Steam for Thawing Hydrants

The Aristocrat steam blast, brought out by the Truck Engineering Co., Fort Wayne, Ind., can be used for many jobs as well as for quick emergency needs in helping to save property. While one of the major functions of the steam blast is the thawing of fire hydrants, it is ideal for thawing crosswalks, manholes and curb drain pits and storm sewers. It may be used for keeping the pumping equipment as well as the rest of the fire-fighting equipment free from ice during a fire, and it also makes street repairs possible in the coldest weather.

The unit contains a quick generating boiler with copper tube sections and carries a 60-pound working pressure. The superheated steam enters the hydrant through a hose, and the thawing process begins immediately. A second hose is inserted in the hydrant to drain the water. The draining operation is also done by steam and eliminates the need of hand-operated pumps. The entire unit is automatically controlled at all times, and the manufacturer guarantees the copper tube sections against explosion. The boiler is heated by fuel oil, and No. 1, 2 or 3 oil can be used. The unit is small and inexpensive and is simple to operate and maintain.

A New Fireman's Helmet Is Waterproof and Safer

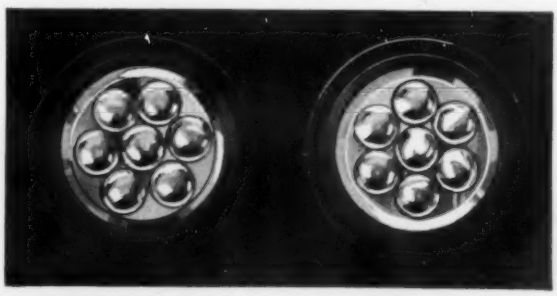
A new MSA fireman's helmet, designed to supply all the qualities desirable for fire-fighting service, has been brought out by the Mine Safety Appliances Co., Braddock, Thomas and Meade Streets, Pittsburgh, Pa., manufacturers of gas masks, respirators, inhalators, first aid kits, and other approved fire department equipment. This new helmet is made from micarta molded in one piece. The normally high-fracture-resistant properties of this type of construction are increased by strong reinforcing on the crown and brim-edge. The helmet is non-conductive and permanently non-softening from water, perspiration or chemicals. Wearing comfort is secured by unusually light weight, self-ventilation, and the use of an all-leather sweatband backed by rubber pads. These pads, together with an adjustable hammock in the crown, also protect the wearer from the shock of blows on the helmet. The helmet has a wide, reinforced brim for neck and shoulder protection and presents a smart, trim appearance at all times.

Some of the new features of this MSA helmet include detachable zipper-operated ear lugs that cover the forehead and the side and back of the head down to the collar; a leather chin-strap designed with separate adjusting and fastening devices to simplify the putting on of the helmet over a gas mask; and a metal ring riveted through the brim at the rear for hanging up the helmet when not in use. The helmet may be secured in standard black, or in white for the use of the chief and officers. A leather shield carries departmental insignia on any color background to identify the fire company.

THE NEW MSA FIREMAN'S HELMET

Clustered Reflector Buttons in Strips

It is now possible for the city engineer or director of public safety to buy reflector buttons in strips 5 feet long 1⅝ inches wide and ½-inch thick for placing on fences, buildings and crossings wherever reflector buttons are usually used. Only a screw driver and a hacksaw are required to set them up. The Traffic Equipment Corporation, 437-439 West 42nd Street, New York, has developed the Reflectostrip. The strips have eight reflectors spaced 1½ inches center to center in each foot of strip. The strip is made 5 feet long and is scored so that it may be easily separated into shorter lengths where necessary. The individual buttons have an effective optical diameter of ⅞-inch and are supplied in red, amber, crystal and green. The use of automatic machinery for the manufacture of these strips has effectively reduced the cost to the purchaser.



THE ACTUAL SIZE AND SPACING OF BUTTONS IN THE REFLECTOSTRIP

250% SAFE
in load-carrying ability

● High strength, load-carrying ability and resistance to impact are three of the most important requirements in trolley and street lighting standards.

Testing of Westinghouse Hollowspun Granite Standards is a matter of regular routine . . . and a vital assurance to Westinghouse engineers that carefully prepared specifications are being scrupulously followed. Results are up to the high standard set for them.

Load-carrying ability, or deflection tests, are made by means of stresses applied at the top of the standard with a cable pulling in a direction normal to the axis of the shaft. All Westinghouse Standards must provide a safety factor of two and one-half times the load they will normally encounter in service.

Westinghouse supplies a complete line of street lighting equipment, and Westinghouse Hollowspun Standards exemplify the high quality of every unit.

For any street lighting problem, Westinghouse is prepared to assume complete responsibility. An advisory service of skilled engineers will plan the exact requirements for any specific need. At its own expense, Westinghouse will study present lighting conditions, and submit a scientific street lighting program that will correct existing lighting conditions, and permit economical expansion of an adequate lighting system as the municipality grows.

WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY,
Lighting Division, Cleveland Works, Edgewater Park, Cleveland, Ohio

Westinghouse
L I G H T I N G

Outdoor Lighting

A Section of *The American City*
Devoted to the Lighting of Streets, Highways, Bridges, Airports, Athletic Fields and Parks, and the Floodlighting of Public Buildings

I.A.M.E. Report on Street Lighting

THE 1934 report of the Committee on Municipal Street Lighting of the International Association of Municipal Electricians sums up the highly important studies of R. E. Simpson of the National Bureau of Casualty and Surety Underwriters, and discusses the modern vapor lamps. The facts are given below:

Sixty cities have sent in complete reports of the 1933 automobile fatalities, giving the location, the month, and the hour of occurrence. By analyzing these reports, the streets on which fatalities were most frequent could be determined, and these streets were subjected to further study as to traffic and lighting conditions. The results:

1. 58 per cent of the fatalities occur at night; 42 per cent during the day.

2. The fatality rate between 5 P. M. and 8 P. M. (hours of darkness) during the four winter months of October, November, December and January is more than two-and-a-half times higher than that during the same three-hour period (hours of daylight) in the four summer months of May, June, July and August.

3. The fatality rate between 5 A. M. and 7 A. M. during the same four winter months is more than two times greater than in the four summer months.

4. Of the total night fatalities, more than 24 per cent occur between midnight and dawn, while during this period there is only about 3 per cent of the total 24 hours traffic. It seems that there is an opportunity for further study.

Traffic counts and street-lighting data are available from half the cities so far. Streets have been classified according to the density of traffic as heavy, medium and light, while the street lighting is classified on the basis of lumens per lineal foot. The traffic unit of comparison is million vehicle miles per year.

On heavy-traffic streets having Class A lighting, the night fatality rate per million vehicle miles is nearly seven times higher than the day rate per mvm, and as the grade of lighting on this class of street goes down, the night fatality rate goes up, while the day rate remains practically constant. This is also true of medium-traffic streets. The returns involving light-traffic streets are as yet too meager for comment. A composite of all traffic returns to date involving approximately 465 mvm (365 mvm by day, 100 mvm by night) shows a fatality rate per mvm of 0.29 by day and 2.61 by night—nine times higher.

The automobile fatality returns from a number of cities gave the type of accident, and from these it is evident that the

A GOOD PLACE FOR A COLLISION

This is a photograph of what is seen from a lonely car on a highway or street lighted only by the bright headlights, and it suggests the blinding glare that the driver must face when another car approaches him, and the glare which the driver of that other car also must face. Adequate highway lighting is an industry of busy thinking right now, with 35,000 deaths this year compared with 31,000 last year, an increase of 13 per cent

BENJAMIN
TRADE MARK

Specialized Lighting Equipment

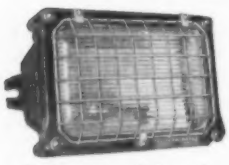
NRA WE DO OUR PART

Warning Signal Lighting Fixtures

Symmetrical Angle Reflector with Bull's Eye

Made with either symmetrical angle or elliptical angle porcelain enameled reflector and ruby lens for railroad crossings and viaducts. Combines highly efficient lighting with an effective warning signal light. Rugged and weather-resisting for severe service in exposed locations.

Underpass Lighting Fixtures



Underpass and Tunnel Lighting Fixture

Sturdy, weatherproof fixtures for the lighting of underpasses or tunnels. May be installed in wall or roof where the fixtures are out of line of vision and provide maximum clearance for passage of traffic.

Open-Type Floodlights

"Play-Area" Floodlight

Specially designed for floodlighting playgrounds, soft ball fields, athletic fields, tennis courts, swimming pools and other recreational areas. Equipped with Benjamin "Saflox" lowering attachment for easy cleaning and relamping on the ground.

Floodlighting Projectors

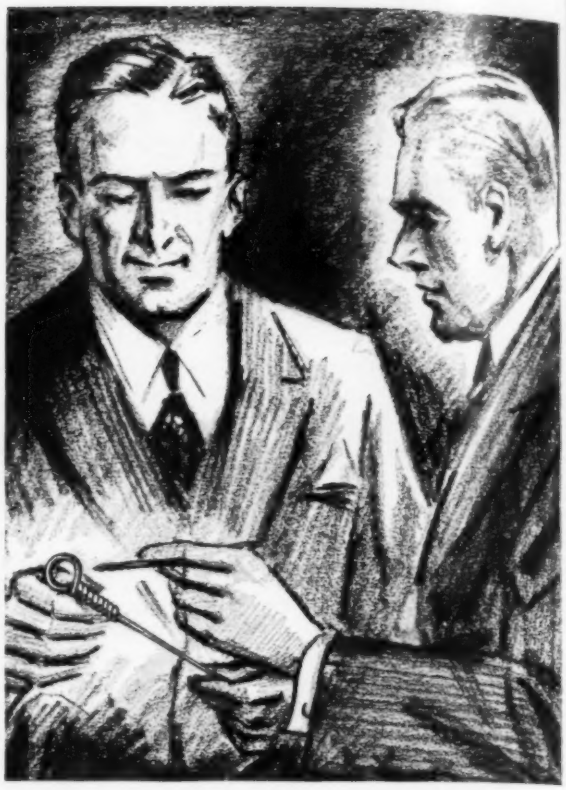
Enclosed Floodlight Projector

For floodlighting buildings, yards, monuments, large outdoor sport areas, etc. In a wide range of sizes and possessing every good feature required for this exacting service. Send for new Lighting Bulletin B-25.

Benjamin Electric Mfg. Co.

Des Plaines, Illinois

New York Chicago San Francisco



This NEW Zinc-Coated Wire makes longer-lasting Fence

THE taxpayer takes pride in modernized city equipment, especially when it is provided at economical cost.

Fencing of property around parks, reservoirs and playgrounds is the outer frame of the scene. A fence of fine, clean, silvery-finish wire gives a framework to the property which makes a good impression.

Bethlehem Steel Company has developed a fine new fence wire with a smooth zinc covering which is available to all fence-makers. The new electric method of coating makes it possible to apply coatings of zinc up to 2.4 oz. per sq. ft., or heavier if desired.

Chain-link fence made of Bethanized Wire can be supplied with zinc coating up to twice the weight that is possible with any other method of manufacture. Bethanized Wire, which is in effect a zinc wire with a steel core, can be woven into fence without fracture or flaking and will stand unusual service conditions in addition to presenting an improved appearance.

A folder giving the detailed facts of Bethanized Wire will be mailed on request to any city official or, at his request, to any manufacturer of fence.

BETHLEHEM STEEL

BETHANIZED WIRE—A PRODUCT OF BETHLEHEM STEEL COMPANY

BETHLEHEM, PA.

pedestrian is the greatest sufferer, particularly during the hours of darkness.

Since the pedestrian must be on the street as distinguished from the sidewalk, to be involved in an automobile accident, it seemed desirable to get counts of pedestrian street-crossing traffic, not only at the intersections, but also between intersections. Little information of this type is available and the returns have been disappointingly small, though there is promise of more in the immediate future. A hurried analysis of returns to date indicates that the combined pedestrian-automobile exposure does not materially alter the relative fatality rate by day, but does have a decided effect on the night rate.

One of the by-products of the survey is the possibility of evolving a traffic flow curve by percentages for each of the 24 hours of a day.

High Price of Curtailment

If time and funds are available, further study could be made in certain cities. For example, a saving of less than $4,000 was effected by light curtailment for six months on one street in a western city, and during this curtailment night accidents on this street increased 70 per cent over the previous six months. In an eastern city there were 7 day fatalities and 24 night fatalities, 16 of the latter occurring at or near street-lighting units out of service. The saving in this city by light curtailment for the year 1933 was less than $25,000. It would be interesting to compare the cost of these accidents with the saving effected by the light curtailment.

Cheaper and Better Vapor Lamps

Last year reference was made to the sodium-vapor lamp and the first demonstration installations by the General Electric and Westinghouse companies. Since that time remarkable progress has been made in this development, and many installations of sodium lamps have been made throughout the country, which are giving excellent account of themselves. At present, due to the limited production of both lamps and equipment, costs are high and offset savings in power consumption. With quantity production, costs will be materially reduced and the use of sodium lighting proportionately increased.

Manufacturers are spending large sums of money in the development of vapor lamps, which will eventually result in greatly improved street and highway lighting and the consequent saving of human lives and many millions of dollars in property damage. We believe that the municipalities should cooperate in this development through its application, and each city is urged to install a demonstration of at least a dozen sodium luminaires and obtain first-hand information on the operation of this new illuminant and the public's reaction thereto.

FLOODLIGHTING A MODERN SETBACK COUNTY BUILDING AT BAY CITY, MICH.
Bay County and City evidently like their new building and want it to be seen at night. They accomplish it with 98 Westinghouse floodlights; 8-inch 150 watts, 10-inch 200 and 250 watts, and 14-inch 500 watts. These are placed behind the parapets on floors 2, 5, 8, and 9

In addition to the sodium-vapor lamp, the high-intensity mercury-vapor lamp has been introduced. This shows the characteristic bluish color of mercury vapor, and the lamp in its larger sizes is highly efficient. While the application for sodium lamps undoubtedly will be for highway lighting, the possibilities for the use of high-intensity mercury-vapor lamps on so-called white ways is promising.

European practice in the use of gaseous conductor lamps is somewhat in advance of that of the United States, and many interesting installations may be observed throughout the continent. The tendency in these installations is towards high mounting and closer spacing than is common over here. One of the newest European inter-city highways employs light sources mounted about 30 feet above the highway. These are suspended on catenary constructions along the center line of the roadway. In this installation the catenary supports are suspended from centrifugally-made concrete poles installed on either side of the highway, spaced 80 feet apart opposite.

The Committee believes that these new light sources, particularly the sodium lamp, will be a very material factor in the development of highway lighting in the near future, and that the high-intensity mercury-vapor lamp in the larger sizes will find a ready acceptance in city street lighting.

It is unthinkable that we in this country should lag behind the ultra-progressive European street and highway lighting experiments and demonstrations. From the viewpoint of the citizen the industry may acknowledge the fault of having learned well but taught poorly. Cooperative action for and with the public's interest, the awakening of more active public consciousness in street-lighting matters, and our own pride, ought to be sufficient incentives towards a renaissance of street and highway lighting activities.

C. M. Baker
A. F. Dickerson
Geo. W. Henderson
W. E. Laurer
L. A. S. Wood, Chairman.

Mercury-Vapor Lamps at Post Office, Lynn, Mass.

EIGHT high-intensity General Electric mercury-vapor lamps have been installed in front of the post office at Lynn, Mass., by the Lynn Gas & Electric Co. Each consists of a mercury-vapor lamp and an incandescent lamp. The bluish-green-white of the mercury vapor and the yellow-red-white of the incandescent blend to a white light that is said to be excellent for heavy-traffic thoroughfares and business sections. The ratings are: mercury, 400 watts and 14,000 lumens; incandescent, 200 watts and 3,400 lumens; the combination, 29 lumens per watt, or half again as much as would be obtained by the incandescent alone. The luminaire is much smaller than the sodium-vapor unit and differs in operation and application.

"HVASS"
SPREADERS
Conquer Slippery Pavements

Spread full width street or road at one time or any part thereof.
—SPREAD—
SAND, ASHES OR CINDERS
Can be quickly attached or detached.
Write for descriptive bulletin.

CHAS. HVASS & CO., Inc. 508 East 19th Street, New York City

Asphalt Distributors Asphalt Kettles
Tool Boxes Oil Burners
Lead Furnaces
Emulsion Sprayers Surface Heaters

LITTLEFORD BROS.
500 EAST PEARL STREET
CINCINNATI, OHIO

THE NEW
FORD V·8 TRUCK

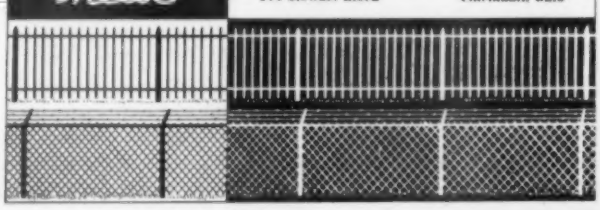
Gives you all these features
- Full-floating Rear Axle
- Special 80-horsepower V-8 Engine
- Heavy-duty Clutch
- Trouble-free 4-speed Transmission

NO COMPROMISE WITH PASSENGER CAR DESIGN...
A REAL TRUCK... MADE OF GENUINE TRUCK PARTS

EverWear
PLAYGROUND APPARATUS
BEACH AND POOL EQUIPMENT
The standard of safety, the world over. A complete line of approved apparatus.
WRITE FOR CATALOG AND PRICES
The EverWear Manufacturing Co.
SPRINGFIELD, OHIO

FENCE for every PUBLIC PROPERTY need

Stewart FENCES
IRON AND CHAINLINK WIRE
New Catalog sent upon request.
The Stewart Iron Works Company, Inc.
211 Stewart Block Cincinnati, Ohio



Statement of the Ownership, Management, Circulation, etc., Required by the Act of Congress of March 3, 1933, of The American City, Published Monthly at New York, N. Y., October 1, 1934,

State of New York, County of New York ss.:

Before me, Notary Public in and for the State and County aforesaid personally appeared EDGAR J. BUTTENHEIM, who having been duly sworn according to law, deposes and says that he is the President and Business Manager of the American City Magazine Corporation, Publishers of THE AMERICAN CITY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of March 3, 1933, embodied in Section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, AMERICAN CITY MAGAZINE CORPORATION, 470 4th Ave., New York City.

Editor, HAROLD S. BUTTENHEIM, 470 4th Ave., New York City.

Managing Editor, NONE.

Business Manager, EDGAR J. BUTTENHEIM, 470 4th Ave., N. Y. C.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock).

AMERICAN CITY MAGAZINE CORPORATION, 470 4th Ave., N. Y. C

Stockholders: EDGAR J. BUTTENHEIM 470 4th Ave., N. Y. C. HAROLD S. BUTTENHEIM 470 4th Ave., N. Y. C.

MARIAN V. BUTTENHEIM, Yonkers, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds mortgages or other securities are: (If there are none, so state). None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the names of the person or corporation for whom such trustee is acting, is given, also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

AMERICAN CITY MAGAZINE CORPORATION
EDGAR J. BUTTENHEIM, Pres.

Sworn to and subscribed before me this 5th day of October, 1934.
New York County Clerk's No. 136.
(My commission expires March 30, 1936).

EDWIN WAGNER,
Notary Public.
New York Co., N. Y.

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

DECEMBER
1934
DEC 1 0 1934

The American City

To Broaden the Federal Definition of Public Works

UNDER consideration in Washington is an important proposal for broadening the regulations for such PWA loans and grants as may be authorized by the coming session of Congress. When the National Industrial Recovery Act of 1933 was drafted, the phrase "publicly owned instrumentalities and facilities" was included among the types of public works for which a comprehensive program was to be prepared and for which Federal aid was authorized. Subsequent legal interpretations appear to have restricted the meaning of these words much more narrowly than the drafters of the Act intended.

The American City is urging, therefore, that when appropriating the large sums for public works which will doubtless be voted by the new Congress, the legislation be drafted to cover explicitly both public works and public improvements.

To that end, the phraseology ought to be broad enough to embrace not only public works as that term is generally understood, but the making of plans for, and the purchase of equipment used in, the construction, operation and maintenance of public works, buildings and institutions. Public works would include, of course (among other types of public construction) paving and road building, water works, sewerage systems and sewage and garbage disposal plants.

Under the heading of public improvements, Federal aid should be available to municipalities for the purchase of water supply and purification equipment, fire-fighting apparatus, traffic signals, street-lighting, street-cleaning and snow-removal apparatus, water meters, tractors and motor trucks, police motorcycles, police radio installations, fire-alarm systems, park, playground and swimming pool equipment, and other municipal needs.

In the section of the Act relating to housing, it should be made clear that large-scale, low-rent housing projects are authorized, with or without slum clearance, and that slum clearance projects are authorized, whether the sites cleared are subsequently used in part for housing projects or are devoted to recreation or other public purposes.